

**METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE**

REGULAR MEETING

Friday, October 14, 2022

1:00 p.m.

**Meeting conducted electronically pursuant to the Procedure Bylaw
28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia**

Webstream available at <http://www.metrovancouver.org>

A G E N D A¹

1. ADOPTION OF THE AGENDA

1.1 October 14, 2022 Regular Meeting Agenda

That the Climate Action Committee adopt the agenda for its regular meeting scheduled for October 14, 2022 as circulated.

2. ADOPTION OF THE MINUTES

2.1 September 9, 2022 Regular Meeting Minutes

That the Climate Action Committee adopt the minutes of its regular meeting held September 9, 2022 as circulated.

pg. 3

3. DELEGATIONS

4. INVITED PRESENTATIONS

5. REPORTS FROM COMMITTEE OR STAFF

5.1 2023 – 2027 Financial Plan Overview

Verbal Update

Designated Speakers: Jerry W. Dobrowolny, Commissioner/Chief Administrative Officer, and Dean Rear, Chief Financial Officer/General Manager, Financial Services

5.2 2023 - 2027 Financial Plan – Air Quality

That the Climate Action Committee endorse the 2023 - 2027 Financial Plan for Air Quality as presented in the report dated October 8, 2022, titled “2023 - 2027 Financial Plan – Air Quality”, and forward it to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.

pg. 8

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

5.3 Air Quality Advisories During the Summer of 2022 *pg. 25*
That the Climate Action Committee receive for information the report dated September 15, 2022, titled “Air Quality Advisories During the Summer of 2022”.

5.4 Manager’s Report *pg. 30*
That the Climate Action Committee receive for information the report dated September 21, 2022 titled “Manager’s Report”.

6. INFORMATION ITEMS

7. OTHER BUSINESS

7.1 Committee Members Roundtable
Verbal Update

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 regular meeting of October 14, 2022.

Membership:

Carr, Adriane (C) – Vancouver
Dhaliwal, Sav (VC) – Burnaby
Arnason, Petrina – Langley Township
Dupont, Laura – Port Coquitlam

Hocking, David – Bowen Island
Kruger, Dylan – Delta
McCutcheon, Jen – Electoral Area A
McIlroy, Jessica – North Vancouver City
McLaughlin, Ron – Lions Bay

Patton, Allison – Surrey
Royer, Zoë – Port Moody
Steves, Harold – Richmond
Wilson, Chris – Coquitlam
Yousef, Ahmed – Maple Ridge

**METRO VANCOUVER REGIONAL DISTRICT
CLIMATE ACTION COMMITTEE**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Climate Action Committee held at 1:03 p.m. on Friday, September 9, 2022 in the 28th Floor Boardroom, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Chair, Councillor Adriane Carr, Vancouver
 Vice Chair, Councillor Sav Dhaliwal*, Burnaby
 Councillor Petrina Arnason*, Langley Township
 Councillor Laura Dupont, Port Coquitlam
 Councillor David Hocking*, Bowen Island
 Councillor Dylan Kruger*, Delta (departed at 2:35 p.m.)
 Director Jen McCutcheon*, Electoral Area A
 Councillor Jessica McIlroy, North Vancouver City
 Mayor Ron McLaughlin*, Lions Bay
 Councillor Allison Patton*, Surrey (arrived at 1:06 p.m.; departed at 2:44 p.m.)
 Councillor Harold Steves*, Richmond
 Councillor Ahmed Yousef*, Maple Ridge

MEMBERS ABSENT:

Councillor Zoë Royer, Port Moody
 Councillor Chris Wilson, Coquitlam

STAFF PRESENT:

Roger Quan, Director, Air Quality and Climate Change, Parks and Environment
 Natalia Melnikov, Legislative Services Coordinator, Board and Information Services

OPENING REMARKS

Chair Carr addressed the recent passing of Chief Ken Baird from Tsawwassen First Nation, noting his contributions to Metro Vancouver as well as the Tsawwassen First Nation community.

1. ADOPTION OF THE AGENDA

1.1 September 9, 2022 Regular Meeting Agenda

It was MOVED and SECONDED

That the Climate Action Committee adopt the agenda for its regular meeting scheduled for September 9, 2022 as circulated.

CARRIED

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

2. ADOPTION OF THE MINUTES

2.1 July 8, 2022 Regular Meeting Minutes

It was MOVED and SECONDED

That the Climate Action Committee adopt the minutes of its regular meeting held July 8, 2022 as circulated.

CARRIED

3. DELEGATIONS

No items presented.

4. INVITED PRESENTATIONS

No items presented.

1:06 p.m. Councillor Patton arrived at the meeting.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Howe Sound Community Forum - Principles for Cooperation and MOU

Report dated July 14, 2022, from Marcin Pachcinski, Division Manager, Electoral Area and Implementation Services, Regional Planning and Housing Services, seeking the Climate Action Committee and MVRD Board's endorsement of the updated Howe Sound Community Forum Principles for Cooperation and requesting the signing of a Memorandum of Understanding with the Howe Sound Biosphere Region Initiative Society.

It was MOVED and SECONDED

That the MVRD Board:

- a) endorse the updated Howe Sound Community Forum Principles for Cooperation; and
- b) authorize the CAO and Corporate Officer to sign the Memorandum of Understanding with the Howe Sound Biosphere Region Initiative Society on behalf of Metro Vancouver.

CARRIED

5.2 BC Local Government Climate Action Program (LGCAP)

Report dated August 15, 2022, from Johann Zerbe, Policy Analyst, and Conor Reynolds, Division Manager, Air Quality and Climate Change Policy, Parks and Environment, providing the Climate Action Committee with an update on the new Local Government Climate Action Program, expected funding under the program, and eligibility and reporting requirements of local governments.

In response to questions, members were informed about collaboration opportunities with the BC LGCAP members, annual reporting on greenhouse gas emissions, and opportunities to expand the scope of the program.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated August 15, 2022, titled “BC Local Government Climate Action Program (LGCAP)”.

CARRIED

5.3 Managing Metro Vancouver’s Corporate Energy and Greenhouse Gas Emissions (2017 to 2021)

Report dated July 19, 2022, from George Friedrich, Senior Project Engineer, Energy Management, Liquid Waste Services, Johann Zerbe, Policy Analyst, and Nicole Chan, Project Engineer, Air Quality and Climate Change Policy, Parks and Environment, providing the Climate Action Committee with an overview of Metro Vancouver’s corporate energy use trends, energy costs, and greenhouse gas emissions from 2017 through 2021, and energy and greenhouse gas emissions management actions.

In response to questions regarding opportunities for emissions reductions and transitioning to low carbon energy sources, members were informed about the strategic energy and emissions management plans being developed for different function areas. Members commented on the importance of setting an example in the reduction of the corporate carbon footprint and opportunities for the use of carbon credits.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated July 19, 2022, titled “Managing Metro Vancouver’s Corporate Energy and Greenhouse Gas Emissions (2017 to 2021)”.

CARRIED

5.4 Climate Change and Habitat Suitability for New Invasive Plants in Metro Vancouver

Report dated July 29, 2022, from Laurie Bates-Frymel, Senior Planner, Regional Planning and Housing Services, providing the Climate Action Committee with an overview of local research supported by Metro Vancouver and other partners to better understand how new high-risk invasive plant species may respond as the climate continues to change.

Members were provided with a presentation on the research aligned with the *Ecological Health Framework*, identifying the invasive species of focus, research modelling method and results, and the next steps.

Request of Staff

Staff were requested to report back on the work program for invasive species.

Presentation material titled “Climate Change and new Invasive Plants – Research on Local Habitat Suitability” is retained with the September 9, 2022 Climate Action Committee agenda.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated July 29, 2022, titled "Climate Change and Habitat Suitability for New Invasive Plants in Metro Vancouver".

CARRIED

2:35 p.m. Councillor Kruger departed the meeting.

5.5 Manager's Report

Report dated August 29, 2022, from Roger Quan, Director, Air Quality and Climate Change, Parks and Environment, providing the Climate Action Committee with an update on the Climate Action Committee 2022 Work Plan, *Climate 2050* engagement, proposed amendments to the British Columbia *Zero-Emissions Vehicles Act*, 2022 UBCM resolutions on Air Quality and Climate Change, Tilbury Marine Jetty and Phase 2 LNG Expansion project, an update on air quality advisories during the summer of 2022, and the Lower Fraser Valley Air Zone report for 2018-2020.

It was MOVED and SECONDED

That the Climate Action Committee receive for information the report dated August 29, 2022 titled "Manager's Report".

CARRIED

6. INFORMATION ITEMS

6.1 Sewage and Waste: Heat Recovery Policy

6.2 Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels

6.3 Banning the Use of Exhaust Gas Cleaning Systems

6.4 Addressing the Use of Heavy Fuel Oil and Exhaust Gas Cleaning Systems in Marine Vessels in the Region

7. OTHER BUSINESS

7.1 Committee Members Roundtable

No items presented.

8. BUSINESS ARISING FROM DELEGATIONS

No items presented.

2:44 p.m. Councillor Patton departed the meeting.

9. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the Climate Action Committee close its regular meeting scheduled for March 11, 2022 pursuant to the *Community Charter* provisions, Section 90 (1) (i) and 90 (2) (b) as follows:

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

(i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose;

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

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

CARRIED

10. ADJOURNMENT/CONCLUSION

The Chair declared the meeting adjourned at 2:46 p.m.

Natalia Melnikov,
Legislative Services Coordinator

Adriane Carr, Chair

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To: Climate Action Committee

From: Neal Carley, General Manager, Parks and Environment
Roger Quan, Director, Air Quality and Climate Change

Date: October 8, 2022 Meeting Date: October 14, 2022

Subject: **2023 - 2027 Financial Plan – Air Quality**

RECOMMENDATION

That the Climate Action Committee endorse the 2023 - 2027 Financial Plan for Air Quality as presented in the report dated October 8, 2022, titled “2023 - 2027 Financial Plan – Air Quality”, and forward it to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.

EXECUTIVE SUMMARY

The 2023 - 2027 Metro Vancouver Financial Plan has been prepared following direction received at the April 14, 2022 Metro Vancouver Board Budget Workshop. This has resulted in a plan that maintains the goals and objectives of Metro Vancouver while removing the use of financial levers that were put in place during the COVID-19 pandemic. Further, this budget represents a pause to assess the implications of the rapidly evolving macro economic environment and to undertake strategic planning with the incoming Board of Directors. The increase in Metro Vancouver’s overall consolidated household impact for 2023 is projected to be 4.5%, down from the 10.1% projected for 2023 in the prior financial planning cycle.

The Air Quality operating budget for 2023 is proposed to be \$14.2 million, a decrease of 0.6% from 2022. The regulatory fee system is based on a principle of polluter pay, with the costs of developing and administering permits and regulations recovered from authorized dischargers of air contaminants. The Board adopted amendments to the air quality fees bylaw in 2022, resulting in increased fee revenues in 2023, and decreased use of tax requisition, which is increasing by only 3.2%.

Implementation of the *Clean Air Plan* and *Climate 2050* roadmaps continues to be a key priority in 2023, which is also resulting in climate action projects being budgeted across the organization. The Sustainability Innovation Funds (SIF) will also supplement climate action projects, as will leveraging and collaboration with external partners. The Climate Action Committee will make recommendations to the Board on SIF projects early in the new year, and some of these will be funded from SIF reserves within 2023. Additional priorities include the development of new and amended air quality regulations. Staff will pursue air quality improvement and health and environmental protection through promoting compliance with permits and air quality bylaws.

PURPOSE

To present the 2023 - 2027 Financial Plan for Air Quality for consideration by the Committee.

BACKGROUND

Metro Vancouver’s annual budget process includes the development of detailed annual budgets and the updating of five-year financial plans for each of the four Metro Vancouver legal entities (Metro 51857109

Vancouver Regional District, Metro Vancouver Housing Corporation, Greater Vancouver Water District and Greater Vancouver Sewerage and Drainage District).

On April 14, 2022 a Metro Vancouver Board Budget Workshop was held with the objective to seek direction for the preparation of the 2023 - 2027 Financial Plan. The workshop outlined the principles that guide the work of Metro Vancouver as an organization, the current 2022 - 2026 Financial Plan, the implications of the COVID-19 pandemic, the tools that can be used to make budget adjustments, and a proposed approach for the 2023 - 2027 Financial Plan.

Given the challenges being observed coming out of the Covid-19 pandemic, this budget represents a pause for Metro Vancouver and focuses on maintaining the existing goals and objectives of Metro Vancouver and Liquid Waste Services. Staff will undertake strategic planning with the incoming Board of Directors, re-evaluate current plans under this leadership, and assess the implications of the rapidly evolving macro environment.

Key highlights of the overall Metro Vancouver 2023 proposed budget are as follows:

- A reduction of \$22 million of the total 2023 Metro Vancouver proposed operating budget compared to that previously projected for 2023
- Maintained or increased contribution to capital and reserves for key functions
- Reduced capital cash flow for 2023 and 2024
- Real reduction of HHI, \$33 less than that previously projected for 2023

This report focuses on the Air Quality function and presents the 2023 annual budget and the updated five-year plan for the years 2023 to 2027 for committee consideration.

AIR QUALITY SERVICE

The Air Quality function within the Metro Vancouver Regional District (MVRD) provides services to all 22 members and encompasses the management and regulation of air quality within the region, under authority delegated from the Provincial government within the *Environmental Management Act*. Air Quality services provided are presented in two areas:

- Air Quality and Climate Change, including the development and implementation of climate action and air quality plans and policies, bylaws and regulations, and supporting activities such as the operation of a network of air quality monitoring stations located throughout the airshed, environmental assessment, and communications and outreach;
- Air Quality Regulation and Enforcement, including the issuance and administration of air quality permits, and promotion of compliance with and enforcement of Metro Vancouver air quality bylaws.

The provision of Air Quality services is guided by direction in the *Board Strategic Plan*, and the *Climate 2050 Strategic Framework* and *Clean Air Plan*, both adopted by the Board; specifically:

Board Strategic Plan:

- Guide climate change policy and action for the Metro Vancouver region for the next 30 years with Metro Vancouver's *Climate 2050* strategy.
- Improve air quality by mitigating threats to public health and the environment.

- Strengthen awareness among and engagement with the public, members, other orders of government, and other stakeholders in the implementation of *Climate 2050*, and foster regional coordination to help implement effective adaptation measures and achieve the long-term targets in reducing greenhouse gas emissions.

Climate 2050 Strategic Framework:

- Ensuring our infrastructure, ecosystems, and communities are resilient to the impacts of climate change.
- Pursuing a carbon neutral region by 2050.

Clean Air Plan, Regional 2030 Targets:

- Reduce regional greenhouse gas (GHG) emissions by 45% from 2010 levels.
- Air quality in the region is continually improving, protecting human health and the environment, by ensuring that:
 - Ambient air quality meets or is better than the ambient air quality objectives and standards that are regularly updated by Metro Vancouver, the BC Government and the Government of Canada; and
 - The amount of time that visual air quality is classified as "excellent" is increasing.

Metro Vancouver also recognizes the history of Indigenous Peoples and aims to build meaningful and enduring relationships with First Nations. As part of our work, Air Quality is committed to engaging First Nation communities through information sharing, engagement and ongoing communication.

WORK PLAN PERFORMANCE INDICATORS

High level performance indicators have been developed across the organization to evaluate trends, determine key actions for the coming year, and to assist in long-term planning. The 2023 Work Plan for Air Quality is presented in this report. Within the air quality work plans, performance indicators have been developed and are being tracked. These include:

- Regional GHG emissions annually (tonnes of CO₂e per capita);
- Net corporate GHG emissions annually (tonnes of carbon dioxide equivalent, CO₂e);
- Days with air quality advisories in place due to emission sources located within the airshed;
- Reliability of air quality monitoring network (% of annual hours with monitoring data available for priority pollutants);
- Reduction of emissions of harmful particulate matter from non-road diesel engines (cumulative number of engines retired, prohibited, moved out of region or out of use since the program began);
- Promote compliance with authorizations (total number of permits and approvals); and
- Response to complaints (number of complaints).

The trend in these performance measures supports the Board direction to reduce greenhouse gas emissions in the region, to meet a 45% reduction target by 2030 and achieve carbon neutrality by 2050. They also support the Board direction for Metro Vancouver to show leadership by achieving carbon neutrality as an organization, through improvements to energy efficiency, utilization of waste streams to generate heat and/or energy, the use of low-carbon fuels, and identification of new carbon capture and offset projects. On the air quality side, programs are focused on continuous improvement and will need to respond to new challenges such as wildfire events, extreme weather, and reducing emissions that are harmful to human health.

CONTINUOUS IMPROVEMENT

Air Quality continues to explore, evaluate and implement continuous improvement opportunities. The 2023 continuous improvement opportunities include the following:

- Continuing to update *Climate 2050* roadmaps on a regular basis. The roadmaps are intended to be dynamic and to evolve with new science, developing technologies, and public opinion;
- Expansion of Metro Vancouver’s portfolio of carbon credit projects and emission reductions, to maintain corporate carbon neutral status;
- Development of new and amended regulations, to drive continuous improvement in air quality, innovation in climate action, and cost recovery from regulated sources;
- Implementation of the recommendations from a third party review of the air quality monitoring network, resulting in improvements and efficiencies in the collection of air quality data and dissemination to the public;
- Development of processes to integrate greenhouse gas emission reduction requirements into regulations and permits;
- Develop capacity and procedures to use more advanced technology to enhance inspection capabilities and efficiency; and
- Develop procedures and guidance for the issuance of administrative penalties.

2023 BUDGET AND 2023 - 2027 FINANCIAL PLAN

The five-year financial plans for this cycle have been updated to address five central themes identified by the Metro Vancouver Board in its Strategic Plan to guide the development of plans and budgets. The five themes are as follows:

- Financial Sustainability
- Environmental Sustainability
- System Stewardship
- Regulatory and Legislative Environment
- Regional Growth

Each Metro Vancouver function has an Annual Work Plan that includes strategic directions, performance indicators and key actions to guide the work for the coming year. Each function also has a “What’s Happening” summary that presents program highlights for the next five years.

The 2023 - 2027 Air Quality Financial Plan is included as Attachment 1. The 2023 Annual Work Plan for Air Quality presented in this report is included in Attachment 2 and the “What’s Happening” highlights for the years 2023 - 2027 are included in Attachment 3.

Operating Budget Highlights

The Air Quality 2023 operating budget is proposed to decrease by \$81,505 for a total budget of \$14,193,563 (Attachment 1). This decrease is primarily due to a reduction in consulting funds for studies and projects funded by the Sustainability Innovation Fund (SIF). Additional projects to be considered for SIF funding will be brought forward to the Climate Action Committee as part of the annual application process, and some will be funded out of the SIF reserve funds in 2023. It is expected that projects in all three SIF areas will have a climate action theme. The overall decrease is partially offset by inflationary factors such as increments for salaries and benefits. It should also be noted that, with the development of the *Climate 2050* roadmaps, additional climate action projects are funded in other areas, including the utilities, regional parks, and housing, and that the funds in

the Air Quality operating budget are used to leverage additional funding for projects with external partners.

The 2023 operating budget includes the following key actions:

- Continue to implement the *Climate 2050 Strategy* and the issue area roadmaps;
- Continue to implement the *Clean Air Plan*, adopted by the Board in September 2021;
- Develop new air quality bylaws, regulations and standards, towards goals for protection of human health and environment, continuous improvement in air quality, cost recovery from regulated sources, and integration of greenhouse gas requirements;
- Implementation of new and amended bylaws, for further reductions in harmful emissions from non-road diesel engines, boilers and process heaters, residential wood burning and open burning of vegetative debris;
- Improve public understanding of air quality and climate change, including outreach and progress reporting on *Climate 2050*, the *Clean Air Plan*, and the preparation of the annual Caring for the Air report; and
- Develop additional air quality monitoring and emissions assessment capabilities to provide the evidence basis and performance measurement for the air quality program, and provide air quality advisory services.

Over the next five years, expenditures are increasing by \$1,081,870, or an average of 1.5% per year.

Communications Program

The 2023 Air Quality Communications Program of \$270,000 is focused on outreach, communication and engagement on Climate 2050, Clean Air Plan, and air quality bylaws and regulations.

Reserve Funds

The financial plan for Air Quality includes the utilization of reserves to annually fund one-time initiatives. This is consistent with the *Operating, Statutory and Discretionary Reserves Policy*. The 2023 - 2027 Projected Reserves for Air Quality are included in Attachment 4.

APPROVAL PROCESS

The proposed 2023 - 2027 Financial Plan and Annual Work Plan is presented for consideration and endorsement before being forwarded to the Board for consideration.

The next steps of the process are:

- The 2023 - 2027 Financial Plan and Annual Work Plan will be presented for consideration at the Metro Vancouver Board Budget Workshop on October 19, 2022.
- The Board will consider adoption of the 2023 Budget and endorsement of the 2023 - 2027 Financial Plan on October 28, 2022.

ALTERNATIVES

1. That the Climate Action Committee endorse the 2023 - 2027 Financial Plan for Air Quality as presented in the report dated October 8, 2022, titled “2023 - 2027 Financial Plan – Air Quality”, and forward it to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.

2. That the Climate Action Committee make recommendations and endorse an amended 2023 - 2027 Financial Plan for Air Quality and forward the amended Financial Plan to the Metro Vancouver Board Budget Workshop on October 19, 2022 for consideration.

FINANCIAL IMPLICATIONS

If the MVRD Board endorses the 2023 - 2027 Financial Plan for Air Quality, as presented under Alternative 1, in 2023 the Air Quality requisition will increase by \$235,155 (3.2%) for a total requisition of \$7,627,421. The review of the system of regulatory fees was completed in 2021, with Board adoption of a new air quality fees bylaw. Implementation of the new bylaw has resulted in increases in polluter pay fee revenues of 57% and 12% from permits and regulations, and non-road diesel engines, respectively, compared to 2022.

Over the term of the five-year plan, the annual Air Quality requisition is projected to decrease by an average of \$104,263 per year (1.3%) to provide the required revenue to offset projected expenditures. It is anticipated that the cost to the average regional household over the next five years for the Air Quality function will rise from just above \$6 in 2023 and will drop under \$6 in 2027.

Under Alternative 2, the Committee may wish to consider recommending amendments to the 2023 Budget and Five-Year Financial Plan for consideration at the Metro Vancouver Board Budget Workshop. Any changes to the plan may have an impact on the MVRD Financial Plan.

SUMMARY / CONCLUSION

The 2023 Budget and Five-Year Financial Plan for Air Quality was prepared following direction received at the April 14, 2022 Metro Vancouver Board Budget Workshop and to respond to direction provided in the *Board Strategic Plan*. It is presented to Committee and Board members to provide overview information on activities and financial impacts for the years 2023 to 2027 for Air Quality.

The presentation of this year's five-year financial plan for Air Quality provides the opportunity for Metro Vancouver to share with its member jurisdictions the proposed service related initiatives over the next five years. It is intended to be used as a guiding document for member jurisdictions in the development of their five-year financial plans and includes projections on household impact to demonstrate how the plan will remain affordable for residents while keeping pace with our critical requirements.

Staff recommends endorsing the 2023 - 2027 Financial Plan and Annual Work Plan for Air Quality as presented under Alternative one.

Attachments:

1. 2023 - 2027 Financial Plan – Air Quality
2. 2023 Work Plans
 - a. Air Quality
 - b. Environmental Regulation and Enforcement – Air Quality
3. 2023 - 2027 “What’s Happening”
4. 2023 - 2027 Projected Reserves – Air Quality

METRO VANCOUVER REGIONAL DISTRICT
 AIR QUALITY
 2023 BUDGET REVIEW
 2023-2027 FINANCIAL PLAN

	2022 BUDGET	2023 BUDGET	% CHANGE	2024 FORECAST	% CHANGE	2025 FORECAST	% CHANGE	2026 FORECAST	% CHANGE	2027 FORECAST	% CHANGE
REVENUES											
Metro Vancouver Regional District Requisitions	\$ 7,392,266	\$ 7,627,421	3.2%	\$ 7,937,095	4.1%	\$ 7,498,228	(5.5%)	\$ 7,595,119	1.3%	\$ 6,870,953	(9.5%)
User Fees	1,715,000	2,687,400		3,068,600		3,438,000		3,816,700		4,195,400	
Non-Road Diesel Fees	1,070,000	1,197,500		1,656,250		2,410,000		2,692,500		3,315,000	
Other External Revenues	439,986	709,242		685,319		681,729		693,481		705,585	
Transfer from Sustainability Innovation Fund Reserves	2,176,816	745,000		400,000		-		-		-	
Transfer from Reserves	1,481,000	1,227,000		1,172,451		643,027		615,000		270,000	
TOTAL REVENUES	\$ 14,275,068	\$ 14,193,563	(0.6%)	\$ 14,919,715	5.1%	\$ 14,670,984	(1.7%)	\$ 15,412,800	5.1%	\$ 15,356,938	(0.4%)
EXPENDITURES											
Operating Programs:											
Ambient Air Quality Monitoring	\$ 2,377,133	\$ 2,500,761		\$ 2,522,805		\$ 2,497,126		\$ 2,916,064		\$ 2,616,986	
Air Quality and Climate Change Policy	2,638,554	3,381,648		3,810,829		3,722,156		3,848,550		3,932,405	
Air Quality Bylaw and Regulation Development	1,161,145	1,388,362		1,401,450		1,422,480		1,454,274		1,494,009	
Engineers in Training	46,525	35,279		36,317		37,292		38,290		39,316	
Regional Sustainability Initiatives	2,176,816	745,000		400,000		-		-		-	
Administration and Department Support	541,721	592,548		612,078		628,533		645,261		662,414	
	8,941,894	8,643,598	(3.3%)	8,783,479	1.6%	8,307,587	(5.4%)	8,902,439	7.2%	8,745,130	(1.8%)
Communications Program	150,000	270,000	80.0%	295,000	9.3%	320,000	8.5%	345,000	7.8%	350,000	1.4%
Environmental Regulation and Enforcement	3,993,324	4,215,776		4,638,590		4,906,612		5,170,179		5,317,244	
Contribution to Non-Road Diesel Reserve	-	-		-		-		-		-	
	3,993,324	4,215,776	5.6%	4,638,590	10.0%	4,906,612	5.8%	5,170,179	5.4%	5,317,244	2.8%
Allocation of Centralized Support Costs	1,189,850	1,064,189	(10.6%)	1,202,646	13.0%	1,136,785	(5.5%)	995,182	(12.5%)	944,564	(5.1%)
TOTAL EXPENDITURES	\$ 14,275,068	\$ 14,193,563	(0.6%)	\$ 14,919,715	5.1%	\$ 14,670,984	(1.7%)	\$ 15,412,800	5.1%	\$ 15,356,938	(0.4%)

AIR QUALITY

Description of services

Air Quality is a Metro Vancouver Regional District function established under the *Environmental Management Act* with the responsibility for managing and regulating air quality and developing and implementing climate actions for the region. The service is guided by the development of management plans that recognize the strong connections between air quality, health and climate change, and that integrate actions, whenever possible, to reduce both air contaminants and greenhouse gases across the region.

This work plan addresses the air quality and climate change policy and planning area, which includes development of management plans and emission reduction actions using an evidence-based approach, relying on the regional network of air quality monitoring stations and other indicators to measure performance and identify priority areas for action. Reduction efforts involve both regulatory initiatives, such as air quality bylaws and regulations, and non-regulatory approaches.

Environmental Regulation and Enforcement is an integrated part of the Air Quality function with its responsibility to manage the discharge of air contaminants under Metro Vancouver Regional District air quality bylaws, through the issuance of permits, orders and licenses, and promotion of compliance.

Strategic directions and high level goals supported

Continue to promote a regional approach on climate action to all Metro Vancouver functions, including both mitigation and adaptation, through Climate 2050.

Guide climate change policy and action for the Metro Vancouver region for the next 30 years with Metro Vancouver's Climate 2050 strategy.

- Develop and advocate for actions fundamental to meeting regional greenhouse gas emission targets for 2030 and 2050 and ensuring our region is resilient to the impacts of climate change.
- Undertake corporate climate action to maintain carbon neutrality as an organization, that supports regional climate change mitigation and adaptation goals and targets and demonstrates leadership.

Improve air quality by mitigating threats to public health and the environment.

- Improve understanding of air quality issues in the region by expanding air monitoring capacity.
- Continue to identify air contaminants in the region, identify priorities and pursue effective actions to reduce pollutants.
- Explore solutions for mitigating health impacts of diminished air quality due to wildfires.

Strengthen awareness among and engagement with the public, members, other orders of government, and other stakeholders in the implementation of Climate 2050, and foster regional coordination to help implement effective adaptation measures and achieve the long-term targets in reducing greenhouse gas emissions.

Performance Indicators

Indicator	Historical and/or industry benchmark	Current performance	2023 performance objective
Net corporate greenhouse gas emissions (tonnes of carbon dioxide equivalent, CO ₂ e)	1997: 13,900 2016: 3,321 (60% carbon neutral) 2019, 2020: 0 (carbon neutral)	2021: 0 (carbon neutral)	0 (carbon neutral)
Regional greenhouse gas emissions (tonnes of CO ₂ e per capita)	2010: 6.3 2020: 5.3	2022: 5.2	4.2 (aligned with Climate 2050 targets)
Days with air quality advisories in place due to emission sources located within the airshed	2018: 7 2020: 2 2021: 5	2022: 6	0
Reliability of air quality monitoring network (% of annual hours with monitoring data available for priority pollutants)	2020: 97%	2021: 97%	> 95%

2023 key actions

- Continue to implement the Climate 2050 Strategy including:
 - roadmaps for climate action in ten issue areas approved by the Board, including transportation, buildings and industry;
 - implement key actions and big moves set out in the roadmaps;
 - implementation of additional energy and greenhouse gas reduction offset projects that will maintain Metro Vancouver’s corporate carbon neutrality;
 - advancement of corporate policies related to energy and climate change; and
 - partnerships and collaboration with member jurisdictions, academia and others on climate action.
- Continue to implement the regional air quality and greenhouse gas management plan, the Clean Air Plan.
- Utilize the Sustainability Innovation Funds to advance development of new and innovative climate actions, including new policies, renewable energy, carbon capture and storage, and engagement and outreach.
- New air quality bylaws, regulations and standards, towards goals for protection of human health and environment and continuous improvement in air quality, including:
 - consultation on new emission regulation bylaws for prioritized sources, including integration of greenhouse gas requirements;
 - implement new system of permit and regulatory fees adopted in 2021, to recover costs of developing regulations, monitoring compliance, and enforcement, while ensuring that fees provide incentives to reduce emissions and impacts;
 - implement amended non-road diesel engine emission regulation, addressing additional engines and utilizing partnerships with other levels of government; and
 - new ambient air quality standards.
- Improve public understanding of air quality and climate change, including outreach and progress reporting on Climate 2050, the Clean Air Plan, and the preparation of the annual Caring for the Air report.
- Develop additional air quality monitoring and emissions assessment capabilities to provide the evidence basis and performance measurement for the air quality program, and provide air quality advisory services.

ENVIRONMENTAL REGULATION AND ENFORCEMENT

AIR QUALITY

Description of Services

The Air Quality Regulation and the Non Road Diesel Engine Regulation Programs enable economic activity while advancing Metro Vancouver's air quality goals through the issuance of site-specific authorizations and promoting compliance with those authorizations and Metro Vancouver air quality bylaws. Bylaws include regulations to control emissions from non-road diesel engines, gas & wood fired boilers, gas stations and gasoline storage facilities, automotive re-finishing facilities, concrete facilities and residential indoor wood burning. The Air Quality Regulatory Program also manages a 24-hour public complaint service that annually handles approximately 3,000 complaints, mostly about odours, smoke and dust.

Strategic Directions and High-Level Goals Supported

The Air Quality Regulatory Programs support Metro Vancouver's 2019-2022 Board Strategic Plan, the Clean Air Plan, and Climate 2050:

- Improve air quality by mitigating threats to public health and the environment
- Identify air contaminants in the region and pursue effective actions to reduce pollutants
- Accelerate emission reductions from industrial facilities
- Reduce non-road diesel emissions and support early adoption of zero-emission non-road equipment
- Implement requirements for higher-emitting wood-burning appliances
- Reduce open-air burning

Performance Indicators

Air Quality Indicator	Historical and/or Industry Benchmark (2021)	Current Performance (2022 YTD – May 30)	2023 Performance Objective
Respond to complaints – number of complaints	2200	559	1500
Promote the reduction of non-road diesel engine particulate matter – cumulative number of engines retired, prohibited, moved out of region or out of use since program began	1899	2291	2450
Promote compliance with authorizations - Total number of permits and approvals	152	147	159

2023 Key Actions

Air Quality

- Bring unauthorized facilities into compliance with the Air Quality Management Bylaw
- Promote continuous improvement and reduction in PM, NOx and VOC emissions by large emitters
- Develop procedures required for issuance of administrative penalties
- Promote awareness of and compliance with the expansion of Non-Road Diesel Engine Emission Regulation Bylaw 1329
- Increase awareness of non-road diesel engine retirement rebates
- Promote awareness of and compliance with Residential Indoor Wood Burning Emission Regulation Bylaw 1303, 2020
- Promote awareness of and compliance with Open Burning Emission Regulation Bylaw
- Support development of bylaw regulating greenhouse gas emissions from large buildings
- Support development of processes to integrate greenhouse gas reduction requirements into regulations and permits

LIQUID WASTE

Description of Services

The Liquid Waste Regulatory Program enables economic activity while advancing Metro Vancouver’s liquid waste management goals through the issuance of authorizations and promoting compliance with those authorizations and Metro Vancouver liquid waste bylaws.

Strategic Directions and High-Level Goals Supported

The Liquid Waste Regulatory Program supports Metro Vancouver’s Integrated Liquid Waste and Resource Management Plan by:

- Issuing authorizations that limit the discharge of non-domestic waste to sewer
- Promoting compliance with liquid waste authorizations and regulations.

Performance Indicators

Liquid Waste Indicator	Historical and/or Industry Benchmark (2021)	Current Performance (2022 YTD – June 2)	2023 Performance Objective
Total number of permits for discharges to sanitary sewers that must be managed and monitored*	240	270	275
Total number of regulated fermentation operations under the Fermentation Operations Bylaw*	119	119	119
Total number of regulated facilities under the Bylaw to Regulate the Discharge of Waste from Hospitals	19	19	19
Total number of regulated sani-dumps under the Sani-dump bylaw	13	11	11

*These numbers include sites that are actively regulated by City of Vancouver staff

2023 Key Actions

<p>Liquid Waste</p> <ul style="list-style-type: none"> • Continue to support efforts by Liquid Waste Services to update the Food Sector Grease Interceptor Bylaw and to conduct a comprehensive review of the Sewer Use Bylaw. • Identify and pursue unauthorized discharges posing threats to the liquid waste management system and infrastructure, workers, biosolids quality and the environment. • Work with the hospital sector on submission and review of pollution prevention plans and required updates to comply with the Hospital Pollution Prevention Plan Bylaw requirements. Inspect these facilities to verify compliance. • Continue implementation of the Trucked Liquid Waste and Sani-dump Bylaws by issuing authorizations, conducting compliance inspections and addressing requests for authorizations to bring out-of-region waste to Metro Vancouver facilities.
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- Identify and assess emerging regional issues that may require regulatory attention such as the discharge of wastewater from municipal swimming pools and methods for efficiently regulating these types of activities.

SOLID WASTE

The Solid Waste Regulatory Program enables economic activity while advancing Metro Vancouver’s solid waste management goals through the issuance of licences and promoting compliance with those licences and Metro Vancouver solid waste bylaws.

Strategic Directions and High-Level Goals Supported

The Solid Waste Regulatory Program supports Metro Vancouver’s Integrated Solid Waste and Resource Management Plan by:

- Issuing licences to private municipal solid waste and recyclable materials facilities
- Ensuring compliance with the licences and solid waste regulatory bylaws

Performance Indicators

Solid Waste Indicator	Historical and/or Industry Benchmark (2021)	Current Performance (2022 YTD)	2023 Performance Objective
Total number of licences issued to private facilities managing municipal solid waste and recyclable materials that must be monitored	42	40	42

2023 Key Actions

Solid Waste

- Bring unauthorized facilities into compliance with the GVS&DD Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996.
- Promote awareness of and compliance with the generator levy and record keeping requirements for waste haulers of the GVS&DD Tipping Fee and Solid Waste Regulation Bylaw No. 306, 2017
- Promote compliance with solid waste licences.

Air Quality

2023 to 2027 – WHAT’S HAPPENING

Below is a summary of the significant initiatives to be undertaken by the Air Quality function over the next 5 years.

Initiative	Description	Theme
2023		
Climate 2050	Complete initial Climate 2050 roadmaps and proceed with implementation. Second round of annual reporting on performance towards targets.	Environmental Sustainability
Clean Air Plan	Ongoing implementation of the Clean Air Plan, adopted by the Board in September 2021.	Environmental Sustainability
Bylaws and Regulations	Implementation of new and amended air quality regulations, including: <ul style="list-style-type: none"> • open burning of vegetative debris; • enhanced non-road diesel engine regulation; • compliance promotion on residential wood burning bylaw; Development of new and amended regulations: <ul style="list-style-type: none"> • cannabis production and processing; • reducing GHG emissions from large buildings; • amendment of the boilers and heaters emission regulation; Promote continuous improvement and emissions reduction by large emitters.	Regulatory and Legislative Environment Financial Sustainability Continuous Improvement
Environmental Monitoring and Indicators	Complete and report out on next regional air emissions inventory, for 2020, to track sources of emissions and trends.	System Stewardship
Sustainability Innovation Fund	Fund applications for climate action and other projects in regional district, liquid waste and water.	Environmental Sustainability
2024		
Climate 2050	Ongoing implementation of projects and actions based on Climate 2050 roadmaps, with reporting on performance and sharing of best practices.	Environmental Sustainability
Bylaws and Regulations	<ul style="list-style-type: none"> • Ongoing development of new and amended air quality regulations: <ul style="list-style-type: none"> ○ small non-road two stroke engines • Continuous improvement through enhanced ambient air quality objectives. • Ongoing implementation of permit and regulatory fees to recover costs and provide incentives to reduce emissions and impacts. 	Regulatory and Legislative Environment
Sustainability Innovation Fund	Fund applications for climate action and other projects in regional district, liquid waste and water.	Environmental Sustainability
2025		

Climate 2050	Ongoing implementation of projects and actions based on Climate 2050 roadmaps, with reporting on performance and sharing of best practices.	Environmental Sustainability
Bylaws and Regulations	Ongoing development and implementation of new and amended air quality regulations.	Regulatory and Legislative Environment
Sustainability Innovation Fund	Fund applications for climate action and other projects in regional district portfolio as well as liquid waste and water.	Environmental Sustainability
2026		
Climate 2050	Ongoing implementation of projects and actions based on Climate 2050 roadmaps, with reporting on performance and sharing of best practices.	Environmental Sustainability
Clean Air Plan	Mid-point progress report on Clean Air Plan	Environmental Sustainability
Bylaws and Regulations	Ongoing development and implementation of new and amended air quality regulations. Review of ambient air quality objectives.	Regulatory and Legislative Environment
Sustainability Innovation Fund	Fund applications for climate action and other projects in regional district, liquid waste and water.	Environmental Sustainability
2027		
Climate 2050	Ongoing implementation of projects and actions based on Climate 2050 roadmaps, with reporting on performance and sharing of best practices.	Environmental Sustainability
Bylaws and Regulations	Ongoing development and implementation of new and amended air quality regulations.	Regulatory and Legislative Environment
Sustainability Innovation Fund	Fund applications for climate action and other projects in regional district, liquid waste and water.	Environmental Sustainability

METRO VANCOUVER DISTRICTS
2023-2027 PROJECTED RESERVES - AIR QUALITY

OPERATING RESERVES

	2022	2023			2023	2024	2025	2026	2027	
	ENDING BALANCE	OPENING BALANCE	CONTRIBUTION	WITHDRAWALS	INTEREST	ENDING BALANCE	ENDING BALANCE	ENDING BALANCE	ENDING BALANCE	
Air Quality	\$ 615,159	\$ 615,159	\$ -	\$ -	\$ 12,303	\$ 627,463	\$ 640,012	\$ 652,812	\$ 665,868	\$ 679,186

DISCRETIONARY RESERVES

	2022	2023			2023	2024	2025	2026	2027	
	ENDING BALANCE	OPENING BALANCE	CONTRIBUTION	WITHDRAWALS	INTEREST	ENDING BALANCE	ENDING BALANCE	ENDING BALANCE	ENDING BALANCE	
Air Quality General Reserve	\$ 2,166,882	\$ 2,166,882	\$ -	\$ (1,227,000)	\$ 31,068	\$ 970,950	\$ 311,193	\$ 172,960	\$ 60,269	\$ 293,775

To: Climate Action Committee

From: Geoff Doerksen, Air Quality Planner
Ken Reid, Superintendent, Environmental Sampling and Monitoring
Parks and Environment Department

Date: September 15, 2022 Meeting Date: October 14, 2022

Subject: **Air Quality Advisories During the Summer of 2022**

RECOMMENDATION

That the Climate Action Committee receive for information the report dated September 15, 2022, titled “Air Quality Advisories During the Summer of 2022”.

EXECUTIVE SUMMARY

Metro Vancouver issued two air quality advisories during the summer of 2022, resulting in advisories being in effect for a total of 11 days.

From July 26 to August 1, the first air quality advisory of the year was issued due to elevated levels of ground-level ozone, coinciding with a heatwave with maximum daytime temperatures exceeding 35 degrees Celsius in parts of the region. Metro Vancouver has put in place actions and policies to mitigate ground-level ozone impacts, through the regional ground-level ozone strategy, but this strategy is now being updated in light of more extreme temperatures due to climate change, and emerging sources of emissions that contribute to ozone formation.

During a second advisory from September 10 to 15, high levels of fine particulate matter were primarily due to smoke from wildfires burning in BC and the US. Significant wildfire smoke impacts in six of the last eight summers demonstrate that Metro Vancouver’s air quality program must continue to adapt to a changing climate that is expected to increase the frequency and severity of both wildfires and heatwaves.

PURPOSE

To provide the Climate Action Committee with information about air quality advisories issued by Metro Vancouver during the summer of 2022, historical trends, and implications for future air quality.

BACKGROUND

Metro Vancouver operates an air quality advisory service for the entire Lower Fraser Valley airshed, including Metro Vancouver and the Fraser Valley Regional District. Air quality advisories are issued to the public when air quality is degraded or is expected to become degraded relative to Metro Vancouver’s ambient air quality objectives, which are benchmarks for acceptable air quality. The advisory service is delivered in collaboration with Environment and Climate Change Canada, BC Ministry of Environment and Climate Change Strategy (BC ENV), Fraser Valley Regional District (FVRD), Vancouver Coastal Health (VCH), Fraser Health Authority (FHA), First Nations Health

Authority (FNHA) and the BC Centre for Disease Control (BC CDC). BC ENV provides an air quality advisory service for the remainder of the province.

METRO VANCOUVER ADVISORY PROGRAM IN 2022

Metro Vancouver operates a comprehensive network of air quality monitoring stations. Data are available in real time on Metro Vancouver's website at airmap.ca and informs the air quality advisory service. The contaminants of primary concern for Metro Vancouver's air quality advisory service are:

- **Ground-level ozone (O₃)** - is produced when nitrogen oxides (emitted when fuels are burned) and volatile organic compounds (emitted from solvents and other sources) react in sunlight.
- **Fine particulate matter (PM_{2.5})** – is less than 2.5 microns in diameter (less than 1/30th the thickness of a human hair), allowing it to penetrate deep into the lungs and into the bloodstream. It can be emitted directly (primarily from fuel combustion and wildfires) or formed indirectly, such as when nitrogen oxides or sulphur oxides react with ammonia.

These contaminants have the greatest potential to reach levels in the region that may be harmful to human health. Metro Vancouver has established ambient air quality objectives for these contaminants, which indicate acceptable levels for different periods of exposure, such as 1-hour, 8-hour, 24-hour and annual.

Metro Vancouver works closely with health authorities and the BC CDC year to develop advisory messaging and public outreach materials with actions people can take to reduce their exposure to degraded air quality (e.g., taking shelter in public air-conditioned buildings with cleaner, cooler air, or reduce intensity of outdoor exercise). In preparation for advisories in the summer of 2022, Metro Vancouver undertook new activities, including a [public video](#) on 'What to Do When An Air Quality Advisory Is Issued' and a new subscription service that sends email updates on the status of air quality in the region in advance of an air quality advisory. The public video includes information on ways to reduce exposure to wildfire smoke; use of portable air cleaners; health advice; how to receive advisory notices; and where to find current air quality data and the Air Quality Health Index (AQHI).

To sign up to receive email updates on the status of air quality in the region in advance of an air quality advisory, people can follow the link below, enter an email address, check the box 'Air Quality Updates' and click 'Subscribe'.

<http://www.metrovancouver.org/services/air-quality/engagement/mailing-list/Pages/default.aspx>

SUMMER 2022 ADVISORIES

Two air quality advisories were issued during the summer of 2022, for a combined total of 11 days.

Ground-Level Ozone, July 26 - August 1, 2022

The first air quality advisory of 2022 was issued on July 26 and remained in place until August 1, coinciding with a heatwave with maximum daytime temperatures exceeding 35 degrees Celsius in parts of the region. The advisory was initiated for ground-level ozone in the eastern portions of Metro Vancouver and the Fraser Valley. Ground-level ozone is not emitted directly, but formed from atmospheric reactions between volatile organic compounds and nitrogen oxides in the presence of sunlight. Nitrogen oxides are emitted when fuels are burned, while volatile organic compounds are

emitted from a variety of sources including fossil fuels, cannabis production, agricultural activities, solvents like paint thinners and varnishes, as well as natural sources. While the frequency and severity of ground-level ozone advisories has been reduced in the last two decades with management actions (e.g. Regional Ground-Level Ozone Strategy), the high temperatures led to ozone concentrations that exceeded air quality objectives at numerous stations for both 1-hour and 8-hour concentrations. During the advisory, wildfire smoke from the BC interior contributed to hazy conditions over the region but there was no significant impact on measured fine particulate matter concentrations at ground level. The advisory was cancelled on August 1 with a return to cooler temperatures.

Wildfire Smoke Advisory, September 10 - 15, 2022

On September 10, an air quality advisory was issued for the entire region because of high concentrations of fine particulate matter (PM_{2.5}) throughout the region, due to smoke from wildfires burning in BC (the Heather Lake fire near Manning Park, the Flood Falls Trail fire near Hope and a number of fires near Chilliwack Lake) and the US (the Bolt Creek fire east of Seattle). Additionally, a local fire burning at a wood recycling facility in south Vancouver produced considerable smoke that was trapped near the surface by an inversion. Smoke from the fire impacted multiple municipalities including Vancouver, Burnaby, Richmond, New Westminster, Surrey, and Coquitlam.

By September 11, the entire region experienced smoky conditions with all PM_{2.5} monitoring stations in exceedance of Metro Vancouver's 24-hour PM_{2.5} air quality objective. The following day (September 12) fine particulate matter concentrations decreased (improved) in some parts of the region, especially near the coast, while other areas remained high. Over the next several days smoke concentrations varied widely across the region with changes in winds, temperature and wildfire behaviour. On September 14 the advisory was cancelled for Metro Vancouver and the Central Fraser Valley due to improved air quality, but continued for the Eastern Fraser Valley. The advisory was fully cancelled September 15 when a change in weather brought cleaner air into the entire region and helped reduce wildfire activity.

IMPLICATIONS FOR FUTURE AIR QUALITY

The attachment to this report provides information on historical trends related to air quality advisories, including contributing factors to advisory events.

In recent summers, the Metro Vancouver region has been impacted by air quality advisories related to both ground-level ozone and wildfire smoke. These advisories, and the occurrence of heatwaves, demonstrate that Metro Vancouver's air quality programs must continue to adapt in response to a changing climate and new challenges that are being presented.

The summer heat dome in 2021 saw a return to ground-level ozone levels not seen since the 1980s, and a heat wave in 2022 also resulted in elevated ground-level ozone concentrations. Metro Vancouver's air quality program has had a historical focus on ozone and smog, and the *Regional Ground-Level Ozone Strategy*, adopted in 2014 by the Metro Vancouver and Fraser Valley Regional District Boards, has used a science-based approach for management actions to reduce emissions within the airshed that contribute to ground-level ozone. However, more extreme temperatures and new sources of emissions, including wildfires, have necessitated an update to the Strategy, which will be part of the Committee's work plan in 2023.

Occurrences of wildfire smoke impacting Metro Vancouver has seen an upward trend in recent years. Six of the last eight summers have experienced widespread wildfire smoke throughout the region for many days. In 2022, the region was impacted by smoke from fires burning in BC as well as the US. Significant smoke can reach our region from wildfires in Washington, Oregon and California where similar trends are being observed. Climate projections for the region indicate increased risk of wildfire activity due to warmer temperatures, lesser snowpack and lower precipitation during the summer, longer fire seasons, and greater incidence of heatwaves.

Metro Vancouver's *Climate 2050* strategy has identified the need for adaptation to climate-related impacts on regional air quality. As *Climate 2050* actions are developed, co-benefits will be emphasized. An example from the Buildings Roadmap is the use of electric heat pumps to enable summer cooling in homes while also reducing GHG emissions. The recently adopted *Clean Air Plan* outlines strategies for continuous improvement in regional air quality, including actions for updating the *Regional Ground-Level Ozone Strategy* and better protections against wildfire smoke such as "clean air" shelters in public buildings, resources to help residents and businesses manage indoor air quality, and providing high quality information to the public during air quality advisories.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Staff time for monitoring and analyzing air quality information, issuing air quality advisories and responding to requests from media and the public is included in annual operating budgets, including overtime for evening and weekend work during the summer period. In the last three advisory seasons (2020 to 2022), weekend staff coverage for the advisory program has been extended past the typical ending on Labour Day, by three to five weeks due to longer wildfire seasons and ongoing threats of wildfire smoke to the region. Consideration of increased resource levels is made during annual budget preparation and may be needed if wildfire activity continues to increase in the future.

CONCLUSION

Public notification of degraded air quality is delivered by Metro Vancouver's air quality advisory program. There is considerable public and media interest in air quality during the summer, especially when advisories are in place. In preparation for the summer advisory season in 2022, Metro Vancouver undertook new activities: the creation of a public video and a new web subscription service to provide air quality updates in advance of an advisory. Two air quality advisories have been issued in 2022. High levels of PM_{2.5} during September were primarily due to smoke from wildfires burning in BC and the US. The heatwave in July resulted in a ground-level ozone advisory. Wildfire smoke advisories in six of the last eight years emphasize how climate change is presenting new challenges for air quality management and the need for adaptation to climate-related impacts on regional air quality.

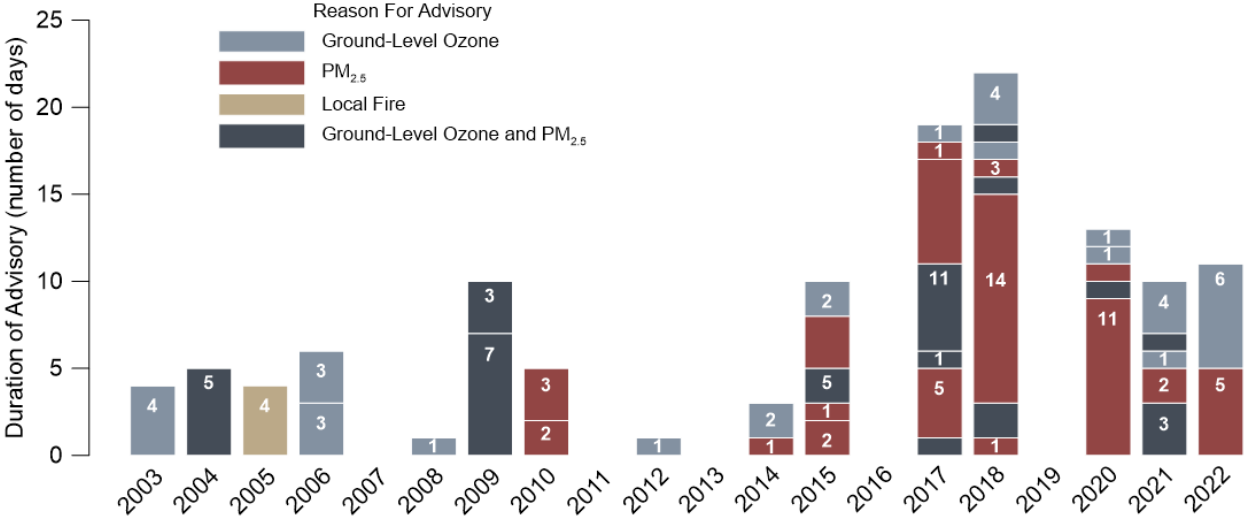
Attachment

Air Quality Advisory Trends

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Air Quality Advisory Trends

In the last twenty years, the number of days on which air quality advisories were in place has ranged from zero to twenty-two days annually. Shown in Figure 1 is the historical trend of the number of days the Lower Fraser Valley was under an advisory. The total number of advisory days is shown as a bar while the number of consecutive days of an advisory period is given by the number in white. The legend indicates the reason for the advisory being issued.



Notes:

- Trigger levels for advisories have changed over the years; care must be taken when interpreting advisory trends.
- The advisory in 2005 was the result of a large fire in Burns Bog.

Figure 1: Number of days of air quality advisories in the Lower Fraser Valley.

To: Climate Action Committee

From: Roger Quan, Director, Air Quality and Climate Change
Parks and Environment Department

Date: September 21, 2022 Meeting Date: October 14, 2022

Subject: **Manager's Report**

RECOMMENDATION

That the Climate Action Committee receive for information the report dated September 21, 2022 titled "Manager's Report".

Climate Action Committee 2022 Work Plan

The attachment to this report sets out the Committee's Work Plan for 2022. The status of work program elements is indicated as pending, in progress, or complete. The listing is updated as needed to include new issues that arise, items requested by the Committee, and changes to the schedule.

Proposed Change to Introduce Greenhouse Gas Requirements into the BC Building Code

The BC Government is proposing to add opt-in greenhouse gas (GHG) requirements as a key change to the BC Building Code. Through the BC Energy Step Code, the current Building Code includes clear objectives and requirements that address the energy efficiency of new buildings, but does not include any objectives or requirements that substantially address GHG emissions. This proposed change will accelerate the reduction of GHGs from new construction in alignment with targets in the Provincial CleanBC Roadmap to 2030.

Metro Vancouver's *Clean Air Plan* and *Climate 2050 Buildings Roadmap* include targets to achieve a 35% reduction in GHG emissions from buildings by 2030, relative to 2010 levels, and to be zero emissions from heating and cooling by 2050. One of the Big Moves in these plans is to work with the BC Government to establish GHG requirements for new buildings, allowing local governments to voluntarily establish zero emission targets earlier. The proposal from the BC Government appears to align with this Big Move. Like the existing BC Energy Step Code, the proposed GHG requirements would allow local governments to opt-in to varying levels of performance (for example, in this case 'medium', 'low' or 'zero carbon') up to 2030, at which time a mandatory requirement of zero carbon new construction would be applied across BC. This proposed change will provide local governments with a clear pathway to accelerate the reduction of community GHG emissions in line with their building decarbonization targets.

Metro Vancouver staff are undertaking a review of the proposed building GHG requirements with consideration of whether it is sufficient to accelerate the reduction of building GHG emissions and meet targets established in the Metro Vancouver region. Staff intend to submit comments to the BC Government by the November 4, 2022 deadline. At the same time, staff are continuing to work with member local governments and other organizations to implement actions from the *Clean Air Plan* and *Climate 2050 Buildings Roadmap* to significantly reduce GHG emissions from buildings.

2022 UBCM Resolutions Related to Air Quality and Climate Change

As reported to the Committee in September, several resolutions with air quality and climate action implications were put forward by Metro Vancouver member jurisdictions at the 2022 Union of British Columbia Municipalities (UBCM) convention that took place in Whistler from September 12 to 16. These resolutions spanned key areas of action such as climate adaptation and resiliency, as well as greenhouse gas reductions related to transportation, buildings, energy, and nature & ecosystems. Of the resolutions by Metro Vancouver member jurisdictions with alignment to actions in the *Clean Air Plan* and the *Climate 2050 Roadmaps*, eight have resulted in an endorsement, as shown in Attachment 2. The complete list of resolution results is provided in Reference 1.

Consultation on Health Canada's Draft Risk Assessment titled "Benzene Releases from Gasoline Stations: Implications for Human Health"

Between May and July 2022, Health Canada sought feedback on its draft assessment of human health risk due to benzene emissions from gasoline stations, published in May 2022. The objective of this risk assessment is to estimate benzene exposure for communities living near gasoline stations and identify risk mitigation options. The assessment concludes that long-term exposure to benzene emissions from gasoline station operations may pose an increased risk of cancer for those living near gasoline stations. Short-term exposure to benzene vapour from the unloading of gasoline from tanker trucks may pose a risk to fetal development during pregnancy. The impact of exposure to benzene appears highest near busy gasoline stations, which are generally found along major roadways.

The assessment identifies three risk mitigation measures to reduce exposure to benzene and limit associated health risks. These measures include the national implementation of Stage 1 vapour recovery at gasoline stations, the use of pressure/vacuum valves on vent stacks, and the implementation of minimum separation distances between residential developments and gasoline stations in new construction.

Metro Vancouver's Gasoline Distribution Emission Regulation Bylaw 1085 (Bylaw 1085) has requirements for Stage 1 vapour recovery systems throughout the gasoline distribution system, including gasoline stations, tanker trucks and distribution terminals. However, Bylaw 1085 does not include provisions related to the other risk mitigation measures identified by Health Canada. In 2023, Metro Vancouver staff will seek Board direction to engage on proposed amendments to Bylaw 1085 about additional measures for mitigating exposure to benzene and other air contaminants from gasoline stations. Staff will engage with municipal land use planners on the possible implementation of minimum separation distances between new construction of residential developments and gasoline stations, particularly near busy gasoline stations along major roadways.

Metro Vancouver provided feedback to Health Canada on the draft risk assessment in July 2022. The feedback requested additional assessment of the risk reduction associated with a sub-set of mitigation measures, to support action in communities such as Metro Vancouver that have already implemented Stage 1 vapour recovery at gasoline stations.

Engagement Update

Staff are continuing with opportunities for the public and for key audiences to provide comment on the two aligned initiatives, [Reducing Greenhouse Gases from Large Buildings](#) (Large Buildings) and

[proposed amendments to Metro Vancouver's Boilers and Process Heaters Emission Regulation Bylaw No. 1087](#) (Boilers and Process Heaters).

On July 19, 2022, staff hosted a webinar for Large Buildings that was attended by over 40 participants from industry associations, building management companies, energy utilities, government agencies, health authorities, and public institutions. The goal of the event was to answer questions, hear about the challenges the audiences face for implementation, and hear of similar initiatives staff could consider collaborating on. In addition to the webinar, staff met with the Building Owners and Managers Association of BC (BOMA), presented at an event hosted by the Mechanical Contractors Association of BC, and corresponded with partners throughout the summer. Targeted discussions with key audience groups will take place this fall, and the project's feedback form will remain open until November 30, 2022.

On July 20, 2022, staff hosted a webinar for Boilers and Process Heaters that was attended by 36 participants from various industry associations, government agencies, and energy utilities. Attendees were able to hear the proposed changes to the Bylaw and ask questions around cost considerations, compliance timelines, and proposed requirements. Staff also met with representatives from BOMA, Engineers and Geoscientists of BC, Corix, Nexterra Systems, and Canadian Standards Association. The opportunity to provide comments via the project's feedback form will be available until November 30, 2022.

Attachments:

1. Climate Action Committee 2022 Work Plan, dated September 21, 2022
2. Metro Vancouver Member Jurisdictions' 2022 UBCM Resolutions Related to Air Quality and Climate Change – Results

References:

1. [2022 UBCM Annual Convention – Resolutions Disposition – Friday, September 16, 2022](#)

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Climate Action Committee 2022 Work Plan

Report Date: September 21, 2022

Priorities

1st Quarter	Status
Climate Action Committee 2022 work plan and meeting schedule	Complete
Climate 2050 – draft roadmap for industry	Complete
Climate 2050 – draft roadmap for nature and ecosystems	Complete
Air quality – initiate process to update boilers and process heaters regulation	Complete
Sustainability Innovation Fund (SIF) – 2022 proposals	Complete
2nd Quarter	
Climate 2050 – management of GHG emissions from large buildings	Complete
Climate 2050 – draft roadmap for energy	Complete
Climate 2050 – draft roadmap for land use and growth management	In progress
Climate 2050 - analysis of how land use will contribute to achieving greenhouse gas reduction targets, especially for transportation	In progress
Climate 2050 – annual report and progress tracking	Complete
Air quality – Initiate engagement on regulation for non-road two-stroke engines	Complete
Air quality – cannabis production and processing emission regulation	In progress
Air quality – open air burning emission regulation	Complete
Annual Caring for the Air report	Complete
Update on ecological health initiatives	In progress
SIF - status report on previously approved liquid waste projects	Complete
SIF - status report on previously approved regional district projects	Complete
3rd Quarter	
Climate 2050 final roadmap: agriculture	In progress
Climate 2050 final roadmap: industry	In progress
Climate 2050 – draft roadmap for infrastructure	In progress
Provincial replacement program for local government climate action	Complete
Air quality – amendments to air quality management fees in emission regulations	Complete
Air quality – amendments to ticketing bylaws	In progress
SIF - status report on previously approved water projects	Complete
4th Quarter	
Climate 2050 final roadmap: energy	In progress
Climate 2050 final roadmap: nature and ecosystems	In progress
Annual budget and 5 year financial plan	In progress
Best Management Practices for invasive species	Complete

ATTACHMENT 2

Metro Vancouver Member Jurisdictions' 2022 UBCM Resolutions Related to Air Quality and Climate Change – Results

Category	Resolution Title	Jurisdiction	Resolution Summary	Results
Climate Adaptation – Extreme Heat Response	Extreme Heat Response	Delta	For the Provincial government to recognize extreme heat events as public health emergencies, and fund local government response measures to ensure the public has access to cooling centres and other assistance during extreme heat events.	Endorsed
Climate Adaptation- Flood Recovery and Resiliency	Support Flood Recovery that Creates Safe Communities and Healthy, Resilient Ecosystems	Port Moody	For federal and provincial governments to ensure flood control projects provide multiple benefits to communities by aligning flood control funding and criteria with other core objectives (i.e. reconciliation, biodiversity, green infrastructure, climate adaptation and mitigation) and that federal and provincial governments co-create technical guidance for local governments on achieving short- and long-term flood recovery needs that are multi-beneficial and improve climate adaptation needs.	Endorsed
Buildings	Expanding BC Manufacturing and Construction of Wood-Frame Housing	Vancouver	For the Provincial government to enable, support and promote the development of zero-carbon standard, wood frame modular housing manufacturing industry in the Province, including the modification of Building and Step code for a faster permitting process.	Endorsed
Buildings	Training of BC Workers in Deep Energy Retrofits and Climate-Smart Construction	Vancouver	For the Provincial government to increase support and funding for trades training programs in deep energy retrofits.	Endorsed
Transportation	Re-Investing in EV Infrastructure	Port Moody	An ask for all orders of government (federal, provincial and local) and BC Hydro to increase investment in EV infrastructure and decrease user fees (including Step 2 EV exemptions) until EV uptake is sufficient; and that the	Endorsed

Category	Resolution Title	Jurisdiction	Resolution Summary	Results
			Government of Canada immediately make all necessary regulatory changes to allow for pricing EV charging by unit of energy.	
Transportation	Review of the Regulatory Environment Pertaining to E-Mobility Devices	Coquitlam	For the Provincial government to review the Motor Vehicle Act regulations to enable local governments to pilot the operation of a broader suite of e-mobility device.	Endorsed
Energy	Fossil Fuel Non-Proliferation Treaty	Richmond Port Moody New Westminster	For the Province to follow through on its CleanBC commitment to enact a GHG emissions cap for natural gas utilities, and to support the objectives of the Fossil Fuel Non-Proliferation Treaty initiative.	Not Endorsed
Energy	Increasing Provincial Incentives for Installing Solar Panels and Solar Hot Water Systems	Vancouver	For the Provincial government to increase financial incentives, including increased feed-in-tariffs, for home and building owners to install solar (photovoltaic) panels and solar hot water systems; and that UBCM request that the Government of BC modify the BC Building Code, and include in a future BC Existing Buildings Alterations Code, specifications for solar (photovoltaic) panels and solar hot water systems.	Endorsed
Nature & Ecosystems	Advocacy for Legislation to Protect Biological Diversity and Ecosystem Health	Port Moody	For the Provincial government to work with Indigenous leadership to develop new legislation to protect and restore biological diversity and ecosystem health, in a manner consistent with the United Nations Declaration on the Rights of Indigenous Peoples, and with involvement of local governments, civil society groups, Indigenous and western scientific experts, and the concerned public.	Endorsed