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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

METRO VANCOUVER REGIONAL DISTRICT
LIQUID WASTE COMMITTEE

MEETING

Wednesday, September 13, 2023
1:00 pm
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 September 13, 2023 Meeting Agenda
That the Liquid Waste Committee adopt the agenda for its meeting scheduled for September 13, 2023 as circulated.

2. ADOPTION OF THE MINUTES

2.1 July 19, 2023 Meeting Minutes *pg 4*
That the Liquid Waste Committee adopt the minutes of its meeting held July 19, 2023 as circulated.

3. DELEGATIONS

4. INVITED PRESENTATIONS

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Interim Reclaimed Water Policy *pg 10*
That the GVS&DD Board approve the proposed Interim Reclaimed Water Policy, as presented in the report dated July 27, 2023 titled "Interim Reclaimed Water Policy".

5.2 2022 GVS&DD Environmental Management & Quality Control Annual Report *pg 15*
That the Liquid Waste Committee receive for information the report dated July 17, 2023, titled "2022 GVS&DD Environmental Management & Quality Control Annual Report".

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

5.3 2023 Unflushables Campaign Results *pg 31*

That the Liquid Waste Committee receive for information the report dated September 6, 2023, titled "2023 Unflushables Campaign Results".

5.4 Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023 *pg 39*

That the GVS&DD Board:

a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023*; and
b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023*.

5.5 Liquid Waste Services Capital Program Expenditure Update as at June 30, 2023 *pg 101*

That the Liquid Waste Committee receive for information the report dated August 15, 2023, titled "Liquid Waste Services Capital Program Expenditure Update as at June 30, 2023".

5.6 Appointment of Enforcement Officers *pg 114*

That GVS&DD Board:

a) pursuant to the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw* 299, 2007 and the *Environmental Management Act*:
    i. rescind the appointment of Metro Vancouver employee Ana Nic Lochlainn as an officer;
    ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, Amanda Craft, and Mike Mijares as officers; and
    iii. rescind the appointment of former City of Vancouver employee Nicole Montgomery as a deputy sewage control manager.
b) pursuant to section 28 of the *Offence Act* for the purpose of serving summons for alleged violations under the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw*:
    i. rescind the appointment of Metro Vancouver employee Ana Nic Lochlainn; and
    ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft.

5.7 Manager's Report *pg 117*

That the Liquid Waste Committee received for information the report dated September 7, 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.

That the Liquid Waste Committee close its meeting scheduled for September 13, 2023 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

90 (1) A part of a council meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:
(g) litigation or potential litigation affecting the municipality.

10. ADJOURNMENT/CONCLUSION

That the Liquid Waste Committee adjourn/conclude its meeting of September 13, 2023.

Membership:

Hurley, Mike (C) – Burnaby
Knight, Megan (VC) – White Rock
Albrecht, Paul – Langley City
Cassidy, Christine – West Vancouver
Ferguson, Steve – Langley Township
Kim, Steve – Coquitlam
Kirby-Yung, Sarah – Vancouver
Kooner, Pardeep – Surrey
Little, Mike – North Vancouver District
Loo, Alexa – Richmond
Nakagawa, Nadine – New Westminster
West, Brad – Port Coquitlam
Yousef, Ahmed – Maple Ridge

METRO VANCOUVER REGIONAL DISTRICT
LIQUID WASTE COMMITTEE

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Liquid Waste Committee held at 1:00 pm on Wednesday, July 19, 2023 in the 28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:
Chair, Mayor Mike Hurley, Burnaby
Vice Chair, Mayor Megan Knight*, White Rock
Councillor Paul Albrecht, Langley City
Councillor Christine Cassidy, West Vancouver
Councillor Steve Kim, Coquitlam
Councillor Sarah Kirby-Yung*, Vancouver
Councillor Pardeep Kooner, Surrey
Mayor Mike Little, North Vancouver District
Councillor Alexa Loo, Richmond
Mayor Brad West*, Port Coquitlam
Councillor Ahmed Yousef*, Maple Ridge

MEMBERS ABSENT:
Councillor Steve Ferguson, Langley Township
Councillor Nadine Nakagawa, New Westminster

STAFF PRESENT:
Jerry W. Dobrovolny‡, Chief Administrative Officer
Peter Navratil, General Manager, Liquid Waste Services
Morgan Mackenzie, Legislative Services Coordinator, Board and Information Services

1. ADOPTION OF THE AGENDA

1.1 July 19, 2023 Meeting Agenda

It was MOVED and SECONDED
That the Liquid Waste Committee adopt the agenda for its meeting scheduled for July 19, 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 June 14, 2023 Meeting Minutes

It was MOVED and SECONDED
That the Liquid Waste Committee adopt the minutes of its meeting held June 14, 2023 as circulated.

CARRIED

3. DELEGATIONS

No items presented.

4. INVITED PRESENTATIONS

No items presented.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Draft Liquid Waste 2024 – 2028 Capital Plan

Report dated June 20, 2023, from Peter Navratil, General Manager, Liquid Waste Services, providing the Liquid Waste Committee with the draft Liquid Waste 2024 – 2028 Capital Plan for comments.

Members were provided with a presentation on the plan's objectives, the key projects by driver, the capital plan expenditures, projects to defer through the Financial Planning Task Force, the proposed capital plan changes, and next steps.

Request of Staff

Staff were requested to report back with additional information on the draft Liquid Waste 2024 – 2028 Capital Plan, detailing the drivers of the capital plan by sewer area and their funding sources.

Presentation material titled "Liquid Waste Services 2024 – 2028 Draft Capital Plan" is retained with the July 19, 2023 Liquid Waste Committee agenda.

It was MOVED and SECONDED
That the Liquid Waste Committee receive for information the report dated June 20, 2023 titled "Draft Liquid Waste 2024 – 2028 Capital Plan".

CARRIED

5.2 Liquid Waste Services Capital Program Expenditure Update as at April 30, 2023

Report dated June 21, 2023, from Colin Meldrum, Director, Engineering, Design & Construction, Liquid Waste Services, providing the GVS&DD Board with the status of the Liquid Waste Services' capital program and financial performance for the 2023 fiscal year to April 30, 2023.

It was MOVED and SECONDED

That the Liquid Waste Committee amend the recommendation on the agenda to strike GVS&DD Board and replace it with Liquid Waste Committee.

CARRIED

It was MOVED and SECONDED

That the Liquid Waste Committee receive for information the report dated June 21, 2023, titled "Liquid Waste Services Capital Program Expenditure Update as at April 30, 2023".

CARRIED

5.3 Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions and Impact Mitigation Framework

Report dated June 21, 2023, from Jennifer Crosby, Director, Project Management Office, Project Delivery, and Nermine Tawfik, Supervisor Community Engagement, External Relations, providing the GVWD and GVS&DD Boards with an update on progress with developing an equitable impact mitigation framework for member jurisdictions in which Metro Vancouver is undertaking capital project construction, including publishing the *Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions*.

Members were provided with a presentation on the *Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions and Impact Mitigation Framework*, highlighting the scope, purpose, objectives and the role of the REAC working group.

Presentation material titled "Guide to MV Utility Capital Projects and Impact Mitigation Framework" is retained with the July 19, 2023 Liquid Waste Committee agenda.

It was MOVED and SECONDED

That the GVWD and GVS&DD Boards receive for information the report dated June 21, 2023 titled "Guide to Metro Vancouver Utility Capital Projects for Member Jurisdictions and Impact Mitigation Framework".

CARRIED

5.4 Greater Vancouver Sewerage and Drainage District Sewer Use Amendment Bylaw No. 366, 2023

Report dated July 11, 2023, from Dana Zheng, Program Manager, Policy, Planning Analysis, Liquid Waste Services, seeking GVS&DD Board approval of the Sewer Use Amendment Bylaw.

It was MOVED and SECONDED

That the GVS&DD Board:

a) give first, second, and third reading to *Greater Vancouver Sewerage and Drainage District Sewer Use Amendment Bylaw No. 366, 2023*; and

b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Sewer Use Amendment Bylaw No. 366, 2023.*

CARRIED

5.5 Greater Vancouver Sewerage and Drainage District Hospital Pollution Prevention Amendment Bylaw No. 367, 2023

Report dated July 11, 2023, from Dana Zheng, Program Manager, Policy, Planning and Analysis, Liquid Waste Services, seeking GVS&DD Board approval of the Hospital Pollution Prevention Amendment Bylaw.

It was MOVED and SECONDED

That the GVS&DD Board:

a) give first, second, and third reading to *Greater Vancouver Sewerage and Drainage District Hospital Pollution Prevention Amendment Bylaw No. 367, 2023*; and

b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Hospital Pollution Prevention Amendment Bylaw No. 367, 2023*.

CARRIED

5.6 Phase 2 Design Build Consulting Services for the Lions Gate Secondary Wastewater Treatment Plant - Change Order to AECOM Contract PC14-0408

Report dated July 11, 2023, from Cheryl Nelms, General Manager, Project Delivery, Nick Kassam, General Manager, Procurement & Real Estate Services, and Dean Rear, Chief Financial Officer & General Manager, Financial Services, requesting authorization by the GVS&DD Board for a change order to AECOM, for Phase 2 Design Consulting Services for the Lions Gate Secondary Wastewater Treatment Plant, through a change order in the amount of $113,000,000, for a total contract value of $153,000,000 (exclusive of taxes).

It was MOVED and SECONDED

That GVS&DD Board:

a) approve Phase 2 Design Consulting Services for the Lions Gate Secondary Wastewater Treatment Plant of AECOM Contract PC-0408 through a change order in the amount of $113,000,000, for a total contract value of $153,000,000 (exclusive of taxes), subject to final review by the Commissioner; and
b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the change order should proceed.

CARRIED

5.7 Award of RFP No. 23-121 Technical Services for the North Shore Wastewater Treatment Plant Project

Report dated July 11, 2023, from Cheryl Nelms, General Manager, Project Delivery, Nick Kassam, General Manager, Procurement & Real Estate Services, and Dean Rear, Chief Financial Officer & General Manager, Financial Services, providing the GVS&DD Board with the results of Request for Proposal (RFP) No. 23-121: Technical Services for the North Shore Wastewater Treatment Plant Project and recommending the GVS&DD Board award the contract to Stantec Consulting Ltd. in an amount up to $25,000,000 (exclusive of taxes).

Members received a correction to an administrative error on page 3 of the report.

It was MOVED and SECONDED

That GVS&DD Board:

a) approve award of RFP No. 23-121 for Technical Services for the North Shore Wastewater Treatment Plant Project, in the amount of $25,000,000 (exclusive of taxes) to Stantec Consulting Ltd., subject to final review by the Commissioner; and
b) authorize the Commissioner and the Corporate Officer to execute the required documentation once the Commissioner is satisfied that the award should proceed.

CARRIED

5.8 Manager's Report

Report dated July 14, 2023, from Peter Navratil, General Manager, Liquid Waste Services, providing the Liquid Waste Committee with updates on the BC Centre for Innovation in Clean Energy (CICE) funding for Biomethane and Green Hydrogen pilot, the barge berth facility at Iona Island Wastewater Treatment Plant, and the Liquid Waste Committee's 2023 Work Plan.

It was MOVED and SECONDED

That the Liquid Waste Committee receive for information the report dated July 14, 2023 titled "Manager's Report".

CARRIED

6. INFORMATION ITEMS

No items presented.

7. OTHER BUSINESS

No items presented.

8. BUSINESS ARISING FROM DELEGATIONS

No items presented.

9. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the Liquid Waste Committee close its meeting scheduled for July 19, 2023 pursuant to section 226 (1) (a) of the *Local Government Act* and the *Community Charter* provisions as follows:

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

(e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality."

CARRIED

10. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

That the Liquid Waste Committee adjourn its meeting of July 19, 2023.

CARRIED

(Time: 2:02 pm)

Morgan Mackenzie,
Legislative Services Coordinator

Mike Hurley,
Chair

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To: Liquid Waste Committee

From: Winson Cheng, Senior Project Engineer, Business Development, Liquid Waste Services

Date: July 27, 2023 Meeting Date: September 13, 2023

Subject: **Interim Reclaimed Water Policy**

RECOMMENDATION

That the GVS&DD Board approve the proposed Interim Reclaimed Water Policy, as presented in the report dated July 27, 2023 titled "Interim Reclaimed Water Policy".

EXECUTIVE SUMMARY

Metro Vancouver has the opportunity to encourage regional use of water that is reclaimed after wastewater treatment. Doing so will reduce the use of valuable, scarce drinking water, and will support commitments to use waste as a resource. Reclaimed water filling facilities have been included in the designs of the new wastewater treatment plants. These facilities will make reclaimed water available to users outside of the plants. An Interim Reclaimed Water Policy is proposed to enable the use of reclaimed water from Metro Vancouver's wastewater treatment plants. The policy is labeled as interim as it's expected there will be amendments based on knowledge gained through initial pilot work.

PURPOSE

To present a proposed Interim Reclaimed Water Policy for consideration by the GVS&DD Board.

BACKGROUND

Metro Vancouver recognizes water is a precious resource and aims to conserve high quality drinking water by using Reclaimed Water when it is financially, socially, and/or ecologically beneficial. Currently in the Metro Vancouver region, water that has been treated to drinking water standards is used for many purposes that do not require this high level of treatment. Due to the effects of climate change, Metro Vancouver is planning for more frequent and intense drought in the summers and envisions using Reclaimed Water as a sustainable supplement to the region's water system, when cost effective. Diversifying our sources of water will help address the risk of drought.

Reclaimed water facilities will be incorporated into the designs for new wastewater treatment plants. A separate proposal for a pilot reclaimed water facility is being developed in coordination with a municipal partner, through which implementation steps for the proposed policy can be developed.

INTERIM RECLAIMED WATER POLICY

The purpose of the proposed Interim Reclaimed Water Policy is to guide the use of reclaimed water from Metro Vancouver's wastewater treatment plants. The policy will help build practices, encourage use, and manage risk, as well as contribute to water reuse and the Board's conservation commitments.

Initially the application of this policy will focus on using reclaimed water to fill truck-mounted portable tanks for specific uses. In the future, Metro Vancouver will consider making reclaimed water at the highest level of non-potable treatment available for a range of uses. Uses may include, landscaping, sports field irrigation; firefighting; dust control; sewer flushing; washing down roads, vehicles and equipment; construction uses; and industrial uses. Potential users of reclaimed water include municipalities, institutions, and private businesses.

The policy will encourage use, manage risk, and establish guidelines for water pricing and implementation plans at planned and future potential facilities.

ALTERNATIVES

1. That the GVS&DD Board approve the proposed Interim Reclaimed Water Policy, as presented in the report dated July 27, 2023, titled "Interim Reclaimed Water Policy".
2. That the GVS&DD Board receive for information the report dated July 27, 2023, titled "Interim Reclaimed Water Policy" and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

If the Policy is approved by the GVS&DD Board, staff will work with the Water Services department to develop pricing appropriate for the grade of water being provided from the wastewater treatment plants. Business cases for capital investments in reclaimed water facilities at wastewater treatment plants will continue to be brought to the Board separately.

OTHER IMPLICATIONS

Provincial regulations including the *Reclaimed Water Guideline* and *Municipal Wastewater Regulation* are applicable to facilities and reclaimed water uses that the policy will enable. Consultation with Provincial staff is expected to be necessary to clarify steps to ensure that reclaimed water providers and users meet the Guideline and Regulation.

CONCLUSION

Metro Vancouver has the opportunity to encourage regional use of water that is reclaimed after wastewater treatment, using reclaimed water facilities that are already planned at new wastewater treatment plants. Doing so will reduce the use of valuable, scarce drinking water, and will support commitments to use waste as a resource. Staff recommend Alternative 1.

ATTACHMENT

1. Interim Reclaimed Water Policy

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

INTERIM RECLAIMED WATER POLICY

Effective Date: September 29, 2023
Approved By: GVS&DD Board

Policy No. XX-XXX

PURPOSE

The *Interim Reclaimed Water Policy* will guide the use of Reclaimed Water from Metro Vancouver's wastewater treatment plants. This Interim Policy will help build practices, encourage use, and manage risk with respect to the reuse of water from wastewater treatment plants.

This Interim Policy applies to Reclaimed Water use projects both initiated by Metro Vancouver or brought forward by interested parties. This Interim Policy will be informed by the development of the Drinking Water Management Plan, and will be updated when the Plan is adopted.

DEFINITIONS

"**Board**" means the Board of Directors of the Metro Vancouver Regional District ("**MVRD**"), the Greater Vancouver Water District ("**GVWD**"), the Greater Vancouver Sewerage and Drainage District ("**GVS&DD**"), and the Metro Vancouver Housing Corporation ("**MVHC**"), as the context requires;

"**Highest Level of Non-Potable Treatment**" means municipal wastewater that is treated in accordance with the quality and monitoring requirements set out in the Municipal Wastewater Regulation for the "greater exposure potential" category of Reclaimed Water;

"**Metro Vancouver**" means, collectively, MVRD, GVWD, GVS&DD, and MVHC, or any one of them, as the context requires;

"**Municipal Wastewater**" has the meaning set out in the Municipal Wastewater Regulation;

"**Municipal Wastewater Regulation**" means the *Municipal Wastewater Regulation*, B.C. Reg. 46/2018, as amended or replaced from time to time;

"**Reclaimed Water**" means municipal wastewater that is treated by a wastewater facility to meet specified standards and is suitable for reuse in accordance with the Municipal Wastewater Regulation; and

"**Reclaimed Water Guideline**" means the "Reclaimed Water Guideline – A Companion Document to the Municipal Wastewater Regulation made under the *Environmental Management Act*" issued July 2013 by the BC Ministry of Environment, as amended or replaced from time to time.

POLICY

Metro Vancouver recognizes water is a precious resource and aims to conserve high quality drinking water by encouraging the use of Reclaimed Water when it is a suitable substitution meeting applicable health and environmental regulations, and is financially, socially, and/or ecologically beneficial.

Currently in the Metro Vancouver region, water that has been treated to meet the regulatory requirements for drinking water is used for many purposes that do not require this high level of treatment.

There is an opportunity for reclaimed water to play a role in the conservation of drinking water in the region.

Objectives

Metro Vancouver will:

1. Encourage the development and use of Reclaimed Water at the Highest Level of Non-Potable Treatment, which will allow for a range of potential uses;
2. Evaluate potential projects on a case-by-case basis using a methodology that includes health, social, financial, environmental and legal benefits, opportunities and risks;
3. Set pricing for the use of Metro Vancouver's Reclaimed Water to account for the social, financial and environmental benefits and opportunities of using Reclaimed Water; and
4. Implement this Interim Policy by developing a Reclaimed Water Implementation Strategy that describes how Metro Vancouver will support the use of Reclaimed Water use in the region where appropriate.

Potential Uses for Reclaimed Water

Metro Vancouver will consider making Reclaimed Water at the Highest Level of Non-Potable Treatment available for a range of uses in addition to current uses at the wastewater treatment plants. Uses may include, but are not limited to, the following, pending evaluation:

- Sewer flushing;
- Firefighting;
- Wildfire risk mitigation;
- Dust control;
- Washing down roads, vehicles and equipment;
- Construction uses;
- Industrial uses; and
- Lawn, landscaping and sports field irrigation.

Supporting Documents

The Province offers guidance and regulation for Reclaimed Water use through the:

- Reclaimed Water Guideline; and
- Municipal Wastewater Regulation

This Policy is also aligned with the following Metro Vancouver policies and strategies, including the:

- Board Strategic Plan;
- Integrated Liquid Waste and Resource Management Plan;
- Drinking Water Management Plan (under review); and
- Ecological Health Framework.

To: Liquid Waste Committee

From: Andjela Knezevic-Stevanovic, Director, Environmental Management & Quality Control, Liquid Waste Services

Date: July 17, 2023 Meeting Date: September 13, 2023

Subject: **2022 GVS&DD Environmental Management & Quality Control Annual Report**

RECOMMENDATION

That the Liquid Waste Committee receive for information the report dated July 17, 2023, titled "2022 GVS&DD Environmental Management & Quality Control Annual Report".

EXECUTIVE SUMMARY

Annual reporting of GVS&DD Environmental Management & Quality Control is a regulatory requirement under the *Integrated Liquid Waste and Resource Management Plan*. This report summarizes the performance, process control and regional environmental quality information gathered through various monitoring programs and other environmental management initiatives. In 2022, Metro Vancouver wastewater treatment plants met performance expectations with respect to reduction of contaminant loadings to the receiving environment. Regional liquid waste discharges were effectively managed in a manner that is protective of human health and aquatic life.

PURPOSE

To provide the Liquid Waste Committee with a summary of the 2022 GVS&DD Environmental Management & Quality Control Annual Report.

BACKGROUND

Annual reporting of GVS&DD Environmental Management & Quality Control (EMQC) is a regulatory requirement under the *Integrated Liquid Waste and Resource Management Plan* (ILWRMP). The Executive Summary of the 2022 GVS&DD EMQC Annual Report (Attachment) summarizes the regulatory and operational information gathered through the various monitoring programs and other environmental management initiatives that are in place to meet GVS&DD's commitments under the ILWRMP. They include operation of the liquid waste collection system; wastewater treatment plant influent, effluent and process streams; effluent toxicity; biosolids quality; and environmental heath of regional water bodies. The 2022 GVS&DD EMQC Annual Report will be submitted to the Ministry of Environment and Climate Change Strategy. Additionally, it will be made available to the public through Metro Vancouver's website and through the Metro Vancouver Library.

SUMMARY OF RESULTS

In order to assess wastewater treatment system efficiency, performance and reliability, and to perform biosolids and environmental quality monitoring, the EMQC Division laboratories alone performed about 211,000 analyses in 2022. Major conclusions are outlined below.

The five wastewater treatment plants (WWTPs) treated over 435 billion litres of wastewater in 2022. The treatment process removed over 61,500 tonnes of biochemical oxygen demand (BOD5) and about 61,000 tonnes of total suspended solids (TSS).

About 14,900 tests were performed on biosolids in 2022. Metal concentrations in weekly composite samples and fecal coliform counts in biosolids were generally well below the regulatory limits outlined in the Organic Matter Recycling Regulation.

Effluent samples from all WWTPs passed the required monthly acute toxicity test except for one Lulu Island sample, two Iona Island samples and three Lions Gate WWTP samples. The Iona Island and the Lions Gate effluent samples required oxygen in excess of that specified by the Environment Canada testing method. In the Lulu Island effluent sample, the toxicant could not be determined.

The Iona Island WWTP Deep Sea Outfall monitoring program included sediment and water quality monitoring. The assessment of the 2021 monitoring results completed in 2022 indicate that the applicable objectives or guidelines for water were met, except for dissolved oxygen, boron and permethrin which is consistent with results from previous years. The concentration of substances measured in the sediments were below concentrations that would likely affect aquatic life with the exception total PBDEs (polybrominated diphenyl ethers).

In 2022, Burrard Inlet Environment Monitoring program included both water and sediment quality monitoring. The results of the 2021 Sediment Effects Survey compiled in 2022 were similar to prior years. There was no correlation between wastewater quality indicators and biota results, suggesting that both nutrient and contaminant distributions in Burrard Inlet are confounded by activities and sources other than the Lions Gate WWTP.

In 2022, water quality monitoring in the Fraser River was performed in the vicinity of the Annacis Island WWTP outfall. The report is under preparation.

The bacteriological water quality for primary-contact recreation was met at bathing beaches from May through September, except for five beach locations. Swimming advisories were issued by the Health Authorities for Locarno Beach, Deep Cove, Sunset Beach, Wreck Beach Trail 7 – Oasis and English Bay.

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

FINANCIAL IMPLICATIONS
Ongoing environmental management, monitoring and quality control works are proceeding as required under the ILWRMP and the associated costs are included in the Liquid Waste Services EMQC annual operating budget.

CONCLUSION
Annual reporting of GVS&DD Environmental Management & Quality Control is a regulatory requirement under the *Integrated Liquid Waste and Resource Management Plan*. This report

summarizes the performance, process control and regional environmental quality information gathered through various monitoring programs and other environmental management initiatives that are in place to meet GVS&DD's commitments under the ILWRMP.

As illustrated by the 2022 GVS&DD Environmental Management & Quality Control Annual Report, Metro Vancouver's wastewater treatment plants continue to meet performance expectations with respect to reduction of contaminant loadings to the receiving environment and are consistently providing ongoing benefits to the region. Numerous monitoring programs continue to fulfill their role of confirming that the wastewater treatment plants are operating efficiently and with no adverse effects on human health or the environment. Findings of various environmental management initiatives confirm that regional liquid waste discharges continue to be effectively managed in a manner that is protective of aquatic life.

ATTACHMENTS

1. 2022 GVS&DD EM&QC Annual Report Executive Summary
2. 2022 GVS&DD Environmental Management & Quality Control Annual Report Presentation

60521966

EXECUTIVE SUMMARY

INTRODUCTION

Background and Purpose

The Greater Vancouver Sewerage and Drainage District (GVS&DD, or the District) operates five wastewater treatment plants (WWTPs) in the region. Three of the five plants provide secondary treatment (Annacis Island, Lulu Island and Northwest Langley) and discharge treated effluent into the lower Fraser River. The other two WWTPs (Iona Island and Lions Gate) provide primary and chemically enhanced primary treatment and discharge treated effluent to Strait of Georgia and First Narrows of Burrard Inlet, respectively.

The purpose of this report is to document the performance of the collection system and WWTPs in 2022 and to summarize the findings of numerous environmental management initiatives.

This report provides an overview of the information collected as a result of Environmental Management & Quality Control's environmental monitoring, modeling and assessment programs, including monitoring of the collection system, WWTP influent, effluent and biosolids quality, and environmental health of regional water bodies. Other programs and projects discussed in this report are in support of ongoing commitments under the Integrated Liquid Waste and Resource Management Plan (ILWRMP, or the Plan) or compliance with federal or provincial regulatory requirements.

Overview of the Liquid Waste Management Regulatory Framework and Monitoring Process

Under the provisions of the Environmental Management Act, the BC Minister of Environment and Climate Change Strategy approved Metro Vancouver's ILWRMP in May 2011. The Plan has three goals: protect public health and the environment; use liquid waste as a resource; and effective, affordable and collaborative management. Metro Vancouver manages its liquid waste in accordance with the ILWRMP and WWTP-specific Operational Certificates (OCs). These Certificates outline wastewater treatment and performance criteria and authorize the GVS&DD to discharge treated effluent from its WWTPs to the receiving waters. Treatment residuals are managed in accordance with Organic Matter Recycling Regulations.

The federal Wastewater Systems Effluent Regulations (WSER) under the Fisheries Act came into effect on July 18, 2012. The WSER contains provisions that authorize the deposit of treated wastewater into Canadian waters. GVS&DD is required to comply with WSER and monitor and report effluent quality on a quarterly basis.

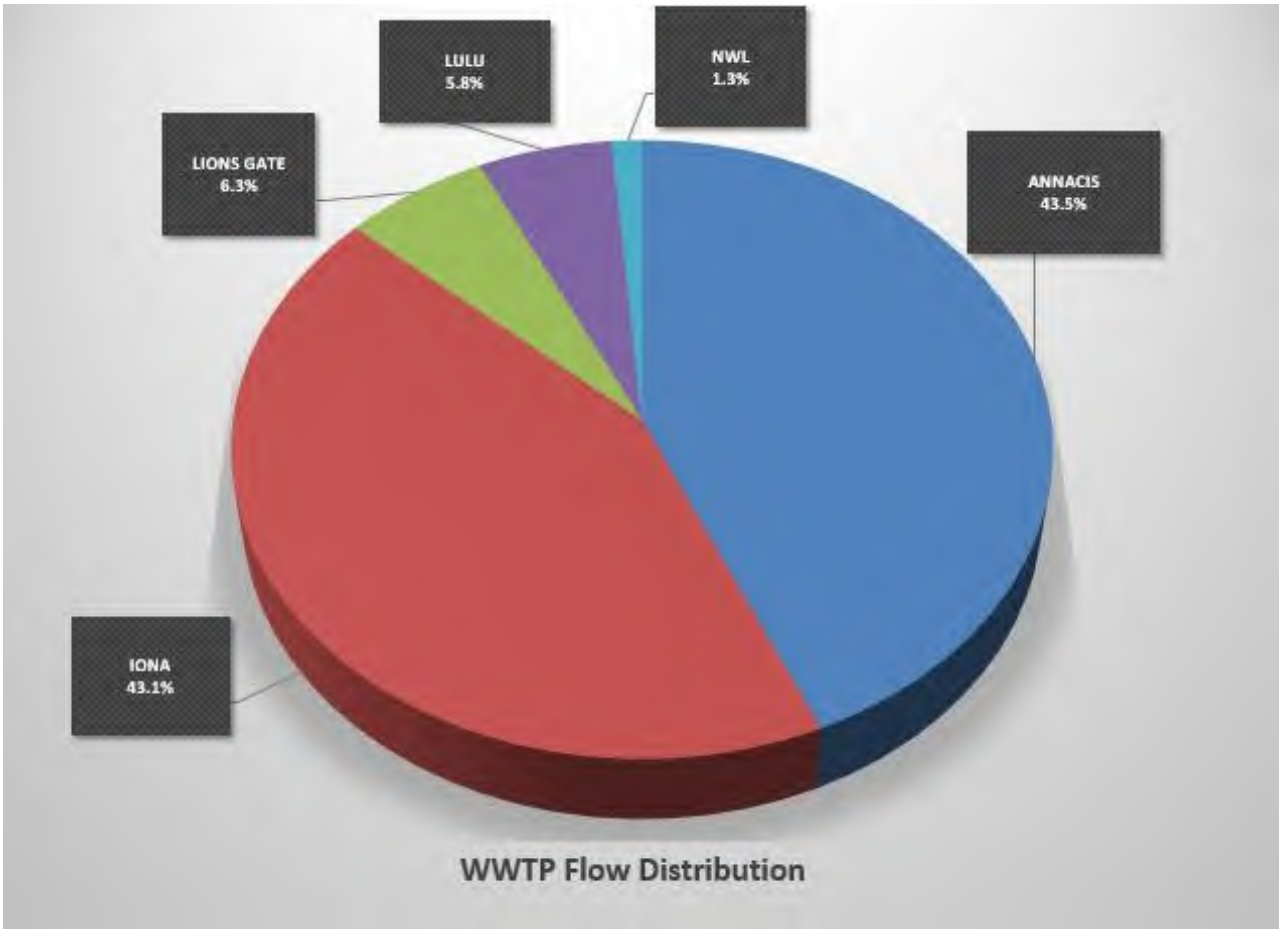
The District's objective is to maintain ongoing compliance with OCs, WSER and other applicable regulatory requirements, and by doing so continue to protect human health and the environment.

Most of the monitoring, laboratory analytical services and data analyses upon which WWTP performance is assessed were provided by the Environmental Management & Quality Control Division of Metro Vancouver Liquid Waste Services.

WASTEWATER TREATMENT PLANTS PERFORMANCE

In 2022, over 435 billion litres of wastewater was treated at the GVS&DD's five WWTPs. Of this total, 215 billion litres received primary or enhanced primary treatment at Iona Island and Lions Gate WWTPs, with the remaining 220 billion litres treated at the three secondary WWTPs at Annacis Island, Lulu Island and Northwest Langley, as shown in the graph below.

Distribution of Wastewater Treated in Metro Vancouver in 2022



Treatment Plant Performance Review

Metro Vancouver treatment plant performance is assessed annually to ensure:

- Plant operation is in accordance with design objectives and specifications; and
- All applicable regulatory reporting requirements are met.

During 2022, the overall performance of the District's five WWTPs exceeded design performance expectations. Individual treated effluent flows for each WWTP and quantities of Biochemical Oxygen Demand (BOD_5) and total suspended solids (TSS) removed in 2022 are summarized in the table below.

Individual treated effluent flows for each WWTP and quantities of BOD_5 and TSS removed in 2022

Total for 2022	Annacis Island WWTP	Iona Island WWTP	Lions Gate WWTP	Lulu Island WWTP	Northwest Langley WWTP	Total
Effluent Flow, ML	189,141	187,685	27,447	25,177	5,728	435,177
BOD_5, Tonnes Removed	37,769	12,768	2,112	7,204	1,740	61,593
TSS, Tonnes Removed	32,901	17,010	4,098	5,432	1,559	60,999

Wastewater Treatment Plant Operational Certificates

The OCs issued by the Ministry of Environment and Climate Change Strategy (MOECCS) under the provisions of the Environmental Management Act include daily compliance levels for flow and daily loadings for BOD_5 (or Carbonaceous Biochemical Oxygen Demand ($CBOD_5$), where applicable) and Total Suspended Solids (TSS). The loading parameters listed as "maximum daily discharge loadings" are used to calculate the annual discharge authorization fees as required by the Permit Fees Regulation and are based on a calendar year. Note that the maximum daily discharge loadings for BOD_5 or $CBOD_5$ and TSS were removed from each WWTP's OC in early 2022 after an amendment by MOECCS. The amendment was initiated to align the OC annual fees to the Permit and Approval Fees and Charges Regulation.

Among other OC conditions, requirements are listed for disinfection of the effluent at all WWTPs except Iona Island, so that fecal coliform water quality objectives for the receiving water body are met at the edge of the Initial Dilution Zone (IDZ) as defined by the Municipal Wastewater Regulation. When chlorine is used for disinfection, it must be removed from the effluent before discharge to the receiving waters.

The OC requirements for BOD_5 and TSS were met throughout 2022. OCs require Metro Vancouver to report all treatment process interruptions to the MOECCS, and in 2022, GVS&DD submitted 11 such reports. Reported events can be generally grouped into 2 categories: Category 1 includes instances of disinfection or dechlorination system interruptions, plant bypasses and other unauthorized discharges. Category 2 events were the results of daily discharge loadings for TSS or $CBOD_5$ above the maximum load limits, as well as a daily rate of effluent discharge above the maximum limits. These events typically have no significant environmental impact.

Each event is carefully reviewed and a probable cause, mitigation measures and potential environmental effects are assessed based on dilution dispersion modeling of effluent plume transport and predicted downstream concentrations, or on field observations.

Integrated Liquid Waste and Resource Management Plan (ILWRMP)

The ILWRMP commits GVS&DD to operate the secondary WWTPs to meet the National Performance Standards for effluent specified by the Canada-wide Strategy for the Management of Municipal Wastewater Effluent (CWS-MMWE). These National Performance Standards for effluent quality are also included into the Wastewater Systems Effluent Regulation. The concentrations of $CBOD_5$ and TSS at all secondary WWTPs stayed below the maximum average of ≤ 25 mg/L as specified by the National Performance Standards. Averaging periods for Annacis Island and Lulu Island WWTP are monthly, and for Northwest Langley WWTP, quarterly.

Wastewater Systems Effluent Regulations (WSER)

Quarterly monitoring reports were submitted through Environment and Climate Change Canada's (ECCC's) Effluent Regulatory Reporting Information System (ERRIS) in 2022. As required by WSER, the effluent monitoring data reported were: number of days that effluent was deposited; total volume of effluent deposited in m^3; average effluent $CBOD_5$ in mg/L; and the average effluent concentration of suspended solids in mg/L. Reporting of effluent acute lethality for secondary treatment plants is required on a quarterly basis[1] for Annacis Island and Lulu Island WWTPs, and on an annual basis for the Northwest Langley WWTP.

In 2022, all District's secondary WWTPs met the applicable WSER requirements for all regulated parameters: TSS, $CBOD_5$, un-ionized ammonia and total residual chlorine. Non-acute lethality of effluent requirement was consistently met by the Annacis Island and Northwest Langley WWTPs but not throughout the entire year at the Lulu Island WWTP.

GVS&DD's primary treatment plants (Iona Island and Lions Gate WWTPs) were issued Transitional Authorizations (TA) under WSER on September 5, 2014. In 2022, the Iona Island WWTP met the applicable WSER requirements for regulated parameters: TSS, $CBOD_5$ and un-ionized ammonia.

The Lions Gate TA expired on December 30, 2020. The monthly average limits of 115 mg/L $CBOD_5$ and 76 mg/L TSS specified in the TA for this WWTP were only applicable up to the end of 2020. Starting January 2021, the applicable monthly average limits defined in WSER are 25 mg/L $CBOD_5$ and 25 mg/L TSS. Due to a delay constructing the North Shore WWTP, the Lions Gate WWTP was not able to meet the $CBOD_5$ and TSS limits in 2022, although it met the limits for total residual chlorine and un-ionized ammonia. Non-acute lethality of effluent requirement was not consistently met throughout the entire year at the Lions Gate WWTP.

[1] Due to toxicity testing results in 2021, frequency was increased to monthly at the Annacis Island and Lulu Island WWTPs in 2022.

Effluent Toxicity Monitoring

In 2022, all effluent samples from all WWTPs passed the OC required Rainbow Trout acute lethality test using ECCC test protocols with the following exceptions: one Lulu Island WWTP sample, two Iona Island WWTP samples, and three Lions Gate WWTP samples. The subject Iona Island and the Lions Gate effluent samples required oxygen in excess of that specified by the ECCC method. In the Lulu Island effluent sample, the toxicant was undetermined.

In addition, acute toxicity testing of *Daphnia magna* was conducted monthly (or quarterly[2] for Northwest Langley WWTP) as recommended by the CWS-MMWE. Samples from all the WWTPs passed the *Daphnia magna* acute toxicity test, with the exception of two Iona Island and two Lions Gate WWTP samples which were determined to be due to a higher oxygen demand.

The 2022 chronic toxicity testing was conducted using two freshwater and four marine tests. While some toxicity was observed, chronic toxicity was not predicted to occur at the initial dilution zone (IDZ) boundary except for the water flea, *Ceriodaphnia dubia*, in two Lulu Island and one Annacis Island WWTP effluent samples tested. For all other WWTP effluent samples and test species, chronic toxicity at the IDZ boundary was not predicted to occur.

Biosolids Monitoring Program

Process Requirements and Biosolids Management

The Organic Matter Recycling Regulation (OMRR) governs the management of biosolids and compost as soil amendments in the Province of British Columbia. Under this regulation, sampling frequencies and criteria values for fecal coliforms and metals as specified for Class A and Class B biosolids are based on several parameters including: type of treatment process (pathogen reduction requirements, vector attraction reduction); the amount of dry solids produced on a monthly basis; and the intended use of the biosolids. The GVS&DD's biosolids management program ensures that any biosolids not meeting class specifications are identified, tracked and managed appropriately.

Biosolids Quality

About 14,900 tests were performed on biosolids in 2022. Metal and fecal coliform counts in biosolids were generally well within the Class A criteria for Annacis Island WWTP, and within Class B criteria for Lions Gate and Lulu Island WWTPs. Iona Island WWTP land-dried biosolids met the Class B criteria. Thickened waste secondary sludge from Northwest Langley WWTP was trucked to Annacis Island WWTP for digestion.

[2] Due to laboratory constraints, only three Northwest Langley and 11 Iona WWTP samples were tested with the *Daphnia magna* test in 2022.

ENVIRONMENTAL MANAGEMENT PROGRAMS

Environmental management programs form a major part of the Metro Vancouver's integrated approach to managing liquid waste. The purpose of these programs is to characterize environmental conditions of relevant water bodies in the region in order to understand the relative contribution and significance of discharges from the regional and municipal systems, determine if the applicable regulatory requirements are being met, and to warn of possible environmental issues. Environmental management programs include environmental monitoring, human health and ecological risk assessments, and environmental simulation and forecasting.

Overflow Quality Monitoring and Environmental Risk Assessments

Municipal wastewater in the region is conveyed and treated in the District's WWTPs. However, discharges of untreated wastewater into regional water bodies are sometimes unavoidable mostly due to insufficient system capacity during wet weather, power outages, and the legacy of combined sewer systems.

Combined Sewer Overflows

In 2022, the Combined Sewer Overflow (CSO) Monitoring Program characterized the overflow water quality at three selected CSO locations: Chilco-Brockton, MacDonald and Westridge.

Sanitary Sewer Overflows

Metro Vancouver continued monitoring the receiving environment water quality after each sanitary sewer overflow and provided results to regulatory agencies and municipalities.

Environmental Monitoring in the Regional Waterbodies

Metro Vancouver monitors environmental health of the regional water bodies:

- near WWTP outfalls in the receiving environment, at the IDZ boundary, and
- in major water bodies within the ambient environment further away from WWTPs and other point source discharges to assess background conditions and help interpret other monitoring results.

In previous annual reports, Metro Vancouver reported separately on WWTP receiving environment monitoring (REM) and ambient environment monitoring (AEM) programs. Metro Vancouver has modified its programs to a more holistic water body approach and in 2022 continued with amalgamated receiving and ambient environment monitoring programs for Burrard Inlet water and sediment quality, and for Fraser River water quality. A summary of the monitoring program findings for the regional water bodies is provided below.

Strait of Georgia

In 2022, a multi-year collaboration with UBC continued, and findings of the 2021 field work were reviewed and compiled into the report. The 2021 Iona Island WWTP Deep Sea Outfall monitoring program included sediment and IDZ boundary monitoring. The assessment of

the monitoring results indicated that the applicable objectives or guidelines were met at the IDZ boundary, except for dissolved oxygen, boron and permethrin, which is consistent with previous years. The concentration of substances measured in the sediments were below concentrations that would likely affect aquatic life with the exception total polybrominated diphenyl ethers (PBDEs). Short-term and long-term exposure tests indicated that all of the sediment samples collected were non-toxic to marine worms (Neanthes arenaceodentata) and mussels (Mytilus galloprovincialis).

Burrard Inlet

In 2022, Burrard Inlet Environment Monitoring program included both water and sediment quality monitoring. The results of the 2021 Sediment Effects Survey, compiled in 2022, were similar to prior years. The Lions Gate WWTP discharges appear to have contributed to conditions more favourable for infaunal recruitment, growth, and reproduction. However, there was no correlation between wastewater quality indicators and biota results, suggesting that both nutrient and contaminant distributions in Burrard Inlet are confounded by activities and sources other than the Lions Gate WWTP.

Fraser River

As Metro Vancouver is transitioning to a more holistic integrated approach to its monitoring programs, what formerly were two separate monitoring programs, the Fraser River WWTP Receiving Environment Monitoring Program (REM) (referred to as Annacis IDZ) and the Fraser River Ambient Monitoring Program (FRAMP), were operated in 2022 as a single program under the name of Fraser River Environmental Monitoring Program (FREMP). In 2022, the field work was completed for the 2022 Fraser River water quality monitoring.

Recreational Water Quality Monitoring Program

Metro Vancouver monitored the bacteriological quality of recreational waters in the region at 114 sampling sites from 41 locations. In 2022, the bacteriological water quality for primary-contact recreation was met for most bathing beaches from May through September. Swimming advisories were issued by the Health Authorities as a result of *E. coli* concentrations exceeding the single sample maximum guideline consecutively at Locarno Beach (6 days; 5 days), Deep Cove (6 days), and Sunset Beach (4 days); as a result of exceedances of the 30-day geometric mean guideline at Wreck Beach Trail 7 – Oasis (15 days); and both consecutive single sample exceedances (7 days) and geometric mean guideline exceedances (9 days) in the case of English Bay.

ATTACHMENT 2

2022 GVS&DD Environmental Management and Quality Control
ANNUAL REPORT

Andjela Knezevic-Stevanovic
Director, Environmental Management and Quality Control, Liquid Waste Services

Liquid Waste Committee – September 13, 2023
61164146

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ENVIRONMENTAL MANAGEMENT & QUALITY CONTROL
Annual Report

In brief:

- Wastewater treatment plants (WWTPs) met performance expectations
- Applicable water quality objectives and guidelines for receiving water bodies were mostly met
- Biosolids quality met regulatory requirements
- Health authorities posted swimming advisories at 5 beaches

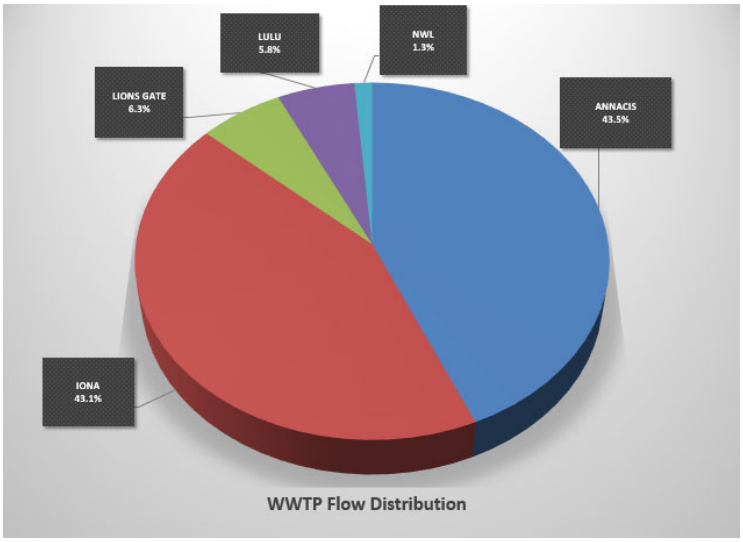
METRO VANCOUVER'S WWTPS

3 secondary – freshwater discharge

2 primary – marine discharge

METRO VANCOUVER'S WWTPs

- About 435 billion litres of wastewater treated in 2022



WWTP REGULATORY AND TECHNICAL PERFORMANCE

- Over 210,000 analyses by Metro Vancouver laboratories alone
- Over 61,000 tonnes of suspended solids (TSS), and over 61,500 tonnes of biochemical oxygen demand (BOD) removed
- Treatment efficiency met or exceeded expectations
- Operational Certificate requirements met

WWTP	% TSS Reduction	% BOD Reduction
Iona Island	63	48
Lions Gate	74	54
Annacis Island	93	95
Lulu Island	97	97
Northwest Langley	94	95

BIOSOLIDS QUALITY MONITORING

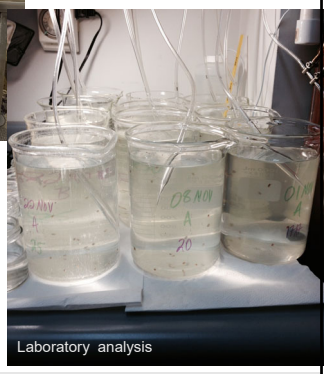
- Almost 15,000 laboratory analyses performed to determine biosolids quality
- Metal concentrations and fecal coliform counts in biosolids generally well below regulatory limits
- Produced over 67,000 bulk tonnes of biosolids and beneficially used 100%


Biosolids

EFFLUENT TOXICITY MONITORING

- Effluent from secondary WWTPs generally passed acute toxicity tests
- Toxicity generally related to reduced oxygen


Sample collection


Laboratory analysis

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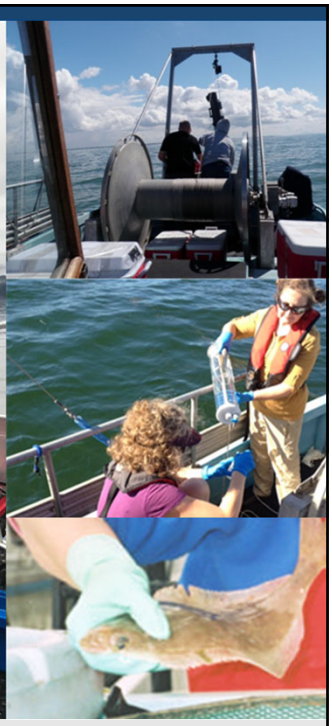
MONITORING OF RECEIVING BODIES

- Strait of Georgia
- Burrard Inlet
- Fraser River


Collection of environmental samples



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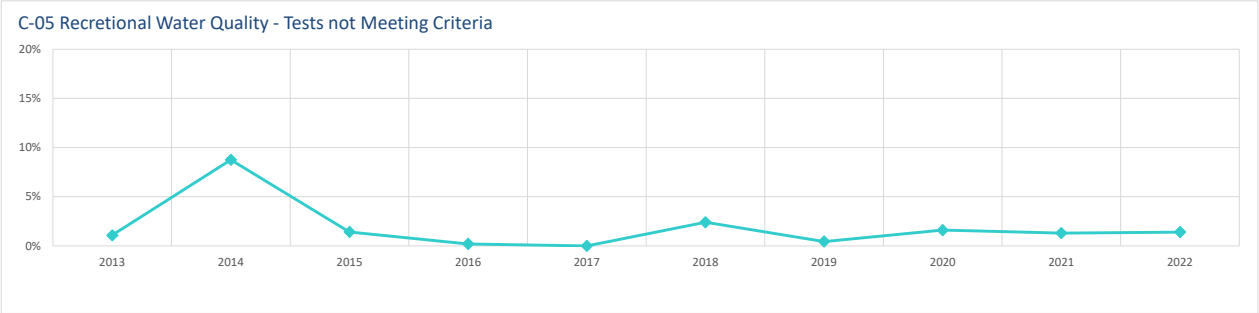
BEACH MONITORING



- Bacteriological water quality monitored at 41 beaches
- Most bathing beaches met the primary-contact recreation guideline except at 5 locations
- Swimming advisories were posted by the Health Authorities for a total of 51 days

CONCLUSIONS

- Metro Vancouver WWTPs meet performance expectations and operate in accordance with Operational Certificate requirements
- Treatment plants consistently provide an ongoing benefit to the region by reducing contaminant loading to the environment
- Regional liquid waste discharges are effectively managed in a manner that is protective of human and aquatic life

Thank you

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Together we make our region strong

11

To: Liquid Waste Committee

From: Shellee Ritzman, Division Manager, Corporate Communications
Carol Nicolls, Communications Specialist, Corporate Communications

Date: September 6, 2023 Meeting Date: September 13, 2023

Subject: **2023 Unflushables Campaign Results**

RECOMMENDATION

That the Liquid Waste Committee receive for information the report dated September 6, 2023, titled "2023 Unflushables Campaign Results".

EXECUTIVE SUMMARY

The 2023 Unflushables campaign ran from April 1 to May 28. The campaign aims to reduce the disposal of seven key problem items into the wastewater system. The media strategy targeted adults aged 25 to 54 and included social media, television, radio, Google Search, and placements in elevators and on bus sides. The campaign produced solid results, generating 20 million impressions, 1.6 million video views and 4,957 engagements. De-ragging incidents have generally dropped since 2017, but have increased the last two years, likely due in part to improved measurement. A post-campaign survey showed that most residents are aware of what can't be flushed, though there was a slight increase in willingness to flush campaign items. Metro Vancouver continues to work with the Health Products Stewardship Association to leverage joint opportunities to promote the medications take-back program. The campaign will run again in 2024.

PURPOSE

To update the Committee on the results of the 2023 regional Unflushables campaign.

BACKGROUND

The incorrect disposal of wipes and other items into the sewer system costs the region around $2 million every year. Now in its seventh year, the Unflushables campaign asks residents to correctly dispose of seven items that should not be flushed: wipes, paper towels, floss, hair, condoms, tampons and applicators, and medications. Medications are difficult for wastewater treatment plants to fully remove and can end up in the environment, while the other items contribute to sewer clogs and overflows. Residents were asked to return medications to a pharmacy and put the other items in the garbage.

The campaign supports the source control objectives of the current and future *Integrated Liquid Waste and Resource Management Plan*. This report provides an update on the results of the 2023 campaign as identified in the 2023 Liquid Waste Committee Work Plan.

2023 REGIONAL UNFLUSHABLES CAMPAIGN

The 2022 Unflushables campaign was in market from April 1 to May 28. The campaign largely used existing creative, with some additional images and videos developed for social media and YouTube.

Media Strategy

The media strategy targeted adults 25–54, skewing slightly towards women as the main purchasers of many of the products addressed in the campaign, and putting extra focus on wipes and medications. The media buy leveraged both broad and targeted tactics and included digital (YouTube, Facebook, Instagram, Google Search) and broadcast (geo-targeted television PSA, radio, and out-of-home advertising on bus sides and elevator screens in multi-family buildings). All the placements directed to the campaign website. A new image and video were created to refresh the social media creative options.

Engagement of Metro Vancouver Members

Campaign details and creative materials were shared with members' communication staff prior to the campaign's launch. All materials were made available for download on the Metro Vancouver website, and custom, co-branded materials were created upon request. The media buy included spots in all member jurisdictions, ensuring that the campaign ads appeared across the region.

Results

Overall the campaign performed well, with most areas maintaining solid results that were similar to last year's. Results in some areas were lower in 2023, due to increased costs on some advertising platforms and a smaller media buy budget than in 2022 (part of the 2023 budget was re-allocated to the biannual post-campaign survey).

Media Buy and Website Performance

- The campaign delivered 20 million impressions, though radio, digital and out-of-home placements.
- Broad, traditional tactics delivered over half of impressions, with just under 13 million impressions across advertising on bus sides, radio, and elevator screens.
- Targeted digital tactics delivered over 6 million impressions across social media, YouTube, and Google Search, with a reach of 664,000. Google Search continue to perform well and saw an increase in the number of people clicking through for more information.
- The campaign generated 1.6 million video views via YouTube and social media. YouTube reach was slightly lower than in 2021, but had a stronger frequency, so people saw the ads more often.
- Radio commercials on three stations generated 2 million impressions (456 spots) and were supplemented with social media posts by radio announcers, which generated 1,343 engagements. The television PSA aired 4,162 times.
- Social media placements performed well, reaching over 600,000 people and generating 3,614 engagements (likes, comments, and shares).

Post-campaign Survey

A post-campaign survey of 1,177 residents was conducted between May 30 and June 8. Results showed that:

- The campaign reached reached 20% of residents and most residents surveyed are aware of how to properly dispose of campaign items

- Four-in-ten (41%) residents flush one or more of the campaign items (excluding feminine hygiene products) at least "occasionally", a moderate increase of 4% from 2021, with convenience cited as the main reason for flushing
- The proportion of women who report flushing feminine hygiene items has steadily declined with growing awareness, dropping from 26% in 2017 to 15% in 2023
- Younger residents and men are more likely to think it's acceptable to flush campaign items. Among residents aged 18-34, 30% feel it's acceptable to flush campaign items, compared to 13% of residents 35 and older.
- Among those who saw the campaign advertising, 31% said they talked about it or its messages with others, with men more likely to discuss the ads than (41% men vs 21% women)

Impacts of Wipes and Other Unflushable Items on the Sewer System

Metro Vancouver continues to track the number of pump station clogs that require de-ragging by operations staff. As shown in Table 1, records show that the long-term trend in the number of de-ragging events at Metro Vancouver pump stations has generally been downwards. However, there are fluctuations in the number of events from time to time that cannot be readily explained. A number of factors contribute to clogs, including unflushable items and grease, making it difficult to measure the specific impact of unflushable items on the wastewater system. In recent years, Metro Vancouver has also been improving the process for tracking de-ragging events, which likely also contributes to the reported increases in 2022. The number of clogs should be considered as only one of the indicators used to assess campaign effectiveness.

Table 1. De-ragging Events in Metro Vancouver Pump Stations

Year	Events
2016	53
2017	121
2018	58
2019	34
2020	35
2021	37
2022	106
2023	29 as of June 15; 58 projected to year end

Metro Vancouver staff continue to work with member jurisdictions to track the collective impacts of wipes and other unflushable items, including clogs, damaged equipment, impacts of sewer overflows, and the associated maintenance costs of these impacts. Metro Vancouver is collaborating with the Health Products Stewardship Association to leverage joint messaging opportunities through social media and pharmacy materials as part of the medications return program. As the Canadian Water and Wastewater Association works to implement product labelling standards for flushability, Metro Vancouver staff continue to review opportunities to incorporate aspects of this messaging into campaign messaging over time.

Plans for 2024 Campaign

The campaign will run again in 2024, likely with similar timing. The post-campaign survey highlights the need to reach younger residents (18-35, especially men), who are much more likely to flush campaign items. Reaching this demographic will require some rethinking of the campaign creative and approach, which can happen as part of a larger refresh of the campaign's creative materials and approach.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The 2023 Unflushables campaign had a budget of $110,000, supported under the Liquid Waste Communications Program of the 2023 General Government Budget.

CONCLUSION

The campaign continues to generally perform well, with solid media buy results and post-campaign survey results. The post-campaign survey generally shows increasing awareness and a decreasing likelihood of residents flushing campaign items. It also highlights the need to reach younger residents, particularly men, as this group is much more likely to flush campaign items. For 2024, Metro Vancouver will look at ways to better reach this group, possibly using a different creative direction. It will also look at options to update the creative, which has now been in market for seven years. The campaign will run again in 2023, likely with similar timing.

ATTACHMENTS

1. Sample of Campaign Materials
2. 2023 Unflushables Campaign Results Presentation

REFERENCE

1. Unflushables Campaign Website

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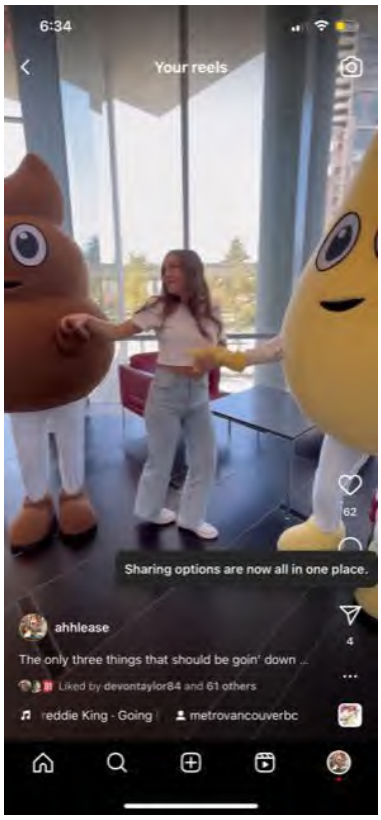
ATTACHMENT 1

Sample of Campaign Materials

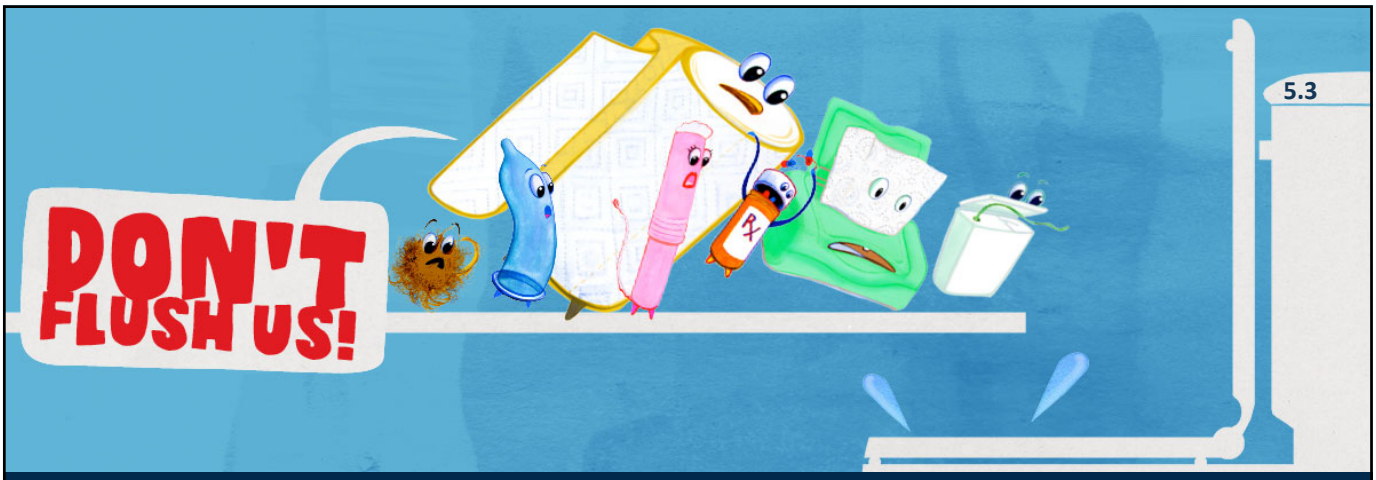
New social media creative

Unflushables bus wrap



Social media posts by radio stations

ATTACHMENT 2



2023 Unflushables Campaign – Key Results

Carol Nicolls
Communications Specialist, Corporate Communications

Liquid Waste Committee - September 13, 2023
61314722

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THE PROBLEM

MEDIA BUY & SURVEY

- Most residents aware of what can't be flushed
- 41% still occasionally flush
- Younger people more likely to flush

DE-RAGGING AT PUMP STATIONS

Year	Number of Events
2016	53
2017	121
2018	58
2019	34
2020	35
2021	37
2022	106
2023	29 as of June 19; 58 projected to year end

Questions?

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Together we make our region strong

To: Liquid Waste Committee

From: Jacqueline Liu-Pope, Senior Project Engineer, Policy Planning and Analysis, Liquid Waste Services

Date: August 18, 2023 Meeting Date: September 13, 2023

Subject: **Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023**

RECOMMENDATION

That the GVS&DD Board:

a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023*; and

b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023*.

EXECUTIVE SUMMARY

This report proposes to repeal and replace *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 268, 2012* with *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023*. The proposed bylaw incorporates feedback from food sector establishments and provides more clarity and flexibility to encourage compliance, while updating bylaw requirements to minimize grease contributions to the system. Fee increases related to bylaw contraventions are included to better reflect current costs of re-inspections and sampling (fees have only been charged 25 times in the last ten years).

PURPOSE

To seek GVS&DD Board adoption of *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023* (proposed bylaw) (Attachment 1).

BACKGROUND

The discharge of fats, oils, and grease (FOG) into sewers can cause major issues for the wastewater system. FOG build-up on pipes and equipment leads to increased operation and maintenance costs and reduced flow capacity in the sewer system, resulting in $2.7 million in annual costs to address FOG build up. Food sector establishments are a major source of FOG and their wastewater discharge is regulated by the *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 268, 2012* (Bylaw No. 268) (Reference 1). Bylaw No. 268 sets requirements for grease interceptor sizing, maintenance, and fixture attachments.

At its April 27, 2018 meeting, the GVS&DD Board adopted a recommendation to review Bylaw No. 268 to update language and provide more clarity, and to better reflect current food sector operations.

ABOUT THE ENGAGEMENT PROGRAM

The bylaw review was initiated in spring 2018. Three phases of engagement followed, targeting stakeholders directly affected by possible changes to Bylaw No. 268 (see Attachment 2 for list of stakeholders). In the first phase of engagement, staff held small group meetings to discuss current bylaw requirements and technical details. In the second phase of engagement, several proposed bylaw changes were developed, discussed, and generally agreed upon with stakeholders. Staff intended to conclude the final phase of engagement in 2020, however, due to the special circumstances of the COVID-19 pandemic, the bylaw review was put on hold to allow the food sector industry to concentrate on day-to-day business during a difficult time.

With COVID-19 restrictions lifted and the food sector industry beginning to rebound, albeit in the face of other challenges such as inflation and labour shortages, staff resumed the final phase of engagement in February 2023. A summary of the first two phases of engagement was posted on the Metro Vancouver website, and an online survey on proposed bylaw changes was initiated. More than 17,000 stakeholders were notified of the proposed bylaw changes and were provided the opportunity for further engagement.

WHAT WE HEARD

Informed by stakeholder feedback, the proposed bylaw changes aim to provide more flexibility to help reduce costly plumbing retrofits while updating bylaw requirements to minimize grease contributions to the sewer system. Overall, participants were supportive of the majority of proposed bylaw changes. Some key themes that were identified during engagement included: concerns about the financial impact of grease interceptor installation and upgrade costs on the food sector industry, especially after the impacts of the COVID-19 pandemic; requests for exemptions; and, comments about jurisdictional inconsistency when it comes to requirements, standards, and implementation. An engagement summary report and feedback summary table are included as Attachments 2 and 3.

MEMBER FEEDBACK

Input from member jurisdictions was gathered and incorporated through a municipal update and feedback session held in late 2019. Feedback was gathered from the Regional Engineers Advisory Committee (REAC) and REAC Liquid Waste Subcommittee at various progress presentations between 2018 and 2023. Proposed bylaw amendments were presented to REAC at their June 9, 2023 meeting. Overall, there is support from member jurisdictions for the proposed bylaw changes, with an interest in current and future enforcement methods to encourage compliance.

PROPOSED BYLAW CHANGES

The four main proposed changes, informed by stakeholder feedback are:

- Update and clarify the definition of food sector establishments to ensure that emerging sectors are regulated alongside traditional restaurants.
- Update which fixtures must, and must not, be connected to grease interceptors to better reflect plumbing configurations commonly found in commercial kitchens and the potential amount of FOG discharged through each fixture.
- Give business owners more flexibility in selecting the right grease interceptor for their needs.

- Update re-inspection fees (from $300 to $500) and sampling fees (from $150 to $300) for the first time since 2012, to reflect the current costs.

Although there are only four main proposed changes, there are a number of formatting-related changes. A new bylaw, instead of an amending bylaw, is being proposed for clarity.

ALTERNATIVES

1. That the GVS&DD Board:
   a) give first, second and third reading to *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023*; and
   b) pass and finally adopt *Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023*.
2. That the GVS&DD Board receive for information the report dated August 18, 2023, titled "Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023" and provide alternate direction to staff.

FINANCIAL IMPLICATIONS

Fees associated with contraventions of Bylaw No. 268 have not been updated since its adoption in 2012. The proposed increases in re-inspection and sampling fees better reflect the current costs to conduct these activities by enforcement staff. In the past ten years, only around 1.5 per cent of inspections necessitated re-inspection/sampling fees (around 25 instances). The additional revenue from the proposed fee increases is expected to be minimal.

CONCLUSION

Bylaw No. 268 regulates wastewater discharges from food sector establishments and sets requirements for grease interceptor sizing, maintenance, and fixture attachments. The proposed bylaw was developed through engagement with stakeholders and will provide more clarity and flexibility to improve the regulation of wastewater discharges from food sector establishments. Fee updates will better reflect current costs of sampling and re-inspection by enforcement staff, when required in the event of a bylaw contravention (fees were only charged 25 times in the last ten years).

ATTACHMENTS

1. Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023
2. Food Sector Grease Interceptor Bylaw Review Final Engagement Summary Report, September 2023
3. Food Sector Grease Interceptor Consideration of Feedback Summary Table, September 2023
4. Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023 Presentation

REFERENCE

1. Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 268, 2012

50380471

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT
BYLAW NO. 365, 2023
A bylaw to regulate the discharge of wastewater from food sector establishments

WHEREAS:

A. The *Environmental Management Act* of British Columbia and the *Greater Vancouver Sewerage and Drainage District Act* authorize the Greater Vancouver Sewerage and Drainage District (the "District") to make bylaws respecting the direct or indirect discharge of wastes into any sewer or drain connected to a sewerage facility operated by the District;

B. The *Greater Vancouver Sewerage and Drainage District Act* authorizes the District to set fees payable by persons who discharge liquid waste into any work, service or plant of the District for conveying, disposing of, or treating liquid waste, or work, service, or plant connected thereto; and;

C. It is deemed desirable to regulate the discharge of wastewater from food sector establishments that contains or may be contaminated with fats, oils and grease.

NOW THEREFORE the Board of the Greater Vancouver Sewerage and Drainage District enacts as follows:

1. Citation

The official citation of this bylaw is the "Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 365, 2023" ("this bylaw").

2. Repeal of Bylaw

The "Greater Vancouver Sewerage and Drainage District Food Sector Grease Interceptor Bylaw No. 268, 2012" is hereby repealed.

3. Definitions

In this bylaw:

"**approved**" means an approval of or given by a Sewage Control Manager;

"**Approved Grease Interceptor Selection Methodology**" refers to the methodology approved by a Sewage Control Manager for choosing a grease interceptor with the appropriate rated flow capacity as required in this bylaw;

"**drain**" means a pipe, conduit, channel, or other similar equipment used to convey wastewater;

"**fats, oils and grease**" means insoluble organic fats, oils or grease from animal or vegetable sources;

"**flow capacity**" means the quantity of wastewater measured in relation to units of time that is discharged into or through a grease interceptor;

"**flow control fitting**" means a device that controls flow capacity;

"**food sector establishment**" means any premises, except premises used solely as a private residence or premises that manufacture food products primarily for wholesale purposes, where food in liquid or solid form is prepared, packaged, served, sold, or otherwise handled in a manner that results in the discharge, directly or indirectly into a sewer or sewage facility, of fats, oils and grease and includes restaurants, delicatessens, fast-food premises, commissary kitchens, markets, cafeterias, hospitals, bars, grocery stores, bakeries, butcher shops, and other similar premises;

"**garbage compactor**" means a device that compacts waste that may be contaminated with fats, oils and grease;

"**gravity grease interceptor**" means a device that uses gravity and interior baffling to separate and retain fats, oils and grease from wastewater;

"**grease interceptor**" means a gravity grease interceptor, hydromechanical grease interceptor, or grease removal device that separates, and then removes or retains, fats, oils and grease from wastewater before it is discharged into a sewer or sewage facility;

"**grease removal device**" means a hydromechanical grease interceptor that separates and removes fats, oils and grease from wastewater using an automatic, mechanical process;

"**hydromechanical grease interceptor**" means a device that uses hydromechanical separation, interior baffling, and air entrainment barriers, whether in combination or independently, to separate and retain fats, oils and grease from wastewater;

"**point of discharge**" means the point at which wastewater is discharged from a grease interceptor into a sewer or sewage facility;

"rated flow capacity" means the flow capacity to which the grease interceptor is certified under a standard listed in section 8.7 or rated in accordance with an alternative methodology or standard approved under section 8.8;

"**sampling point**" means the point at which a sample of wastewater can be collected;

"**Sewer Use Bylaw**" means *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw No. 299, 2007*;

"**solids interceptor**" means a device that separates, and then removes or retains, solids from wastewater, including a basket, screen, or other similar device;

"**Trucked Liquid Waste Bylaw**" means *Greater Vancouver Sewerage and Drainage District Trucked Liquid Waste Bylaw No. 345, 2021*; and

"**wastewater depth**" means the depth of the wastewater measured from the bottom of the grease interceptor to the surface of the content in the grease interceptor.

4. Terms

Terms defined in the Sewer Use Bylaw or incorporated by reference into the Sewer Use Bylaw have the same meaning in this bylaw unless otherwise defined.

5. References

References in this bylaw to an enactment, including the Sewer Use Bylaw, include the enactment as it may be amended or replaced from time to time.

6. Application

Every person who discharges, or allows or causes to be discharged, directly or indirectly, wastewater from a food sector establishment into a sewer or sewage facility must comply with this bylaw.

7. Restrictions

7.1 Subject to sections 7.2 and 7.3, no person shall discharge, or allow or cause to be discharged, directly or indirectly, wastewater from a food sector establishment into a sewer or sewage facility if the wastewater contains any of the following:

a. high volume discharge;

b. restricted waste;

c. stormwater;

d. prohibited waste;

e. uncontaminated water;

f. groundwater;

g. trucked liquid waste;

h. any substance, whether gaseous, liquid, or solid, that may cause damage to a sewer or sewage facility by corrosion;

i. any substance, whether gaseous, liquid, or solid, in a concentration or quantity that may cause interference with the proper operation of a sewer or sewage facility;

j. any substance, whether gaseous, liquid, or solid, in a concentration or quantity that may injure or is capable of injuring the health of any person, property or life form;

k. any substance, whether gaseous, liquid, or solid, in a concentration or quantity that is or may become a safety hazard to persons who operate or maintain a sewer or sewage facility; or

l. any substance, whether gaseous, liquid, or solid, used to dilute non-domestic waste, including water.

7.2 A person may discharge, or allow or cause to be discharged, directly or indirectly into a sewage facility, non-domestic trucked liquid waste from a food sector establishment if the discharge is in compliance with the Trucked Liquid Waste Bylaw.

7.3 A person may discharge, or allow or cause to be discharged, directly or indirectly into a sewer or sewage facility, restricted waste that is pH waste, biological oxygen demand, total suspended solids or total oil and grease, all as described in Schedule B of the Sewer Use Bylaw, if the discharge is otherwise in compliance with this bylaw.

7.4 No person shall add, or cause or permit to be added into a grease interceptor any enzymes, solvents, hot water, bacteria, or other biological or chemical substance to facilitate the passage of fats, oils and grease through a grease interceptor.

8. Grease Interceptor Requirements

8.1 Every owner or operator of a food sector establishment must use grease interceptors in accordance with this bylaw to separate fats, oils and grease, and then remove or retain such fats, oils and grease from wastewater before the wastewater is discharged into a sewer or sewage facility.

8.2 The following fats, oils and grease bearing fixtures in a food sector establishment must be connected directly or indirectly to a grease interceptor:

a. cooking equipment that is connected, directly or indirectly, to a drain, including wok stations, soup kettles, tilt kettles, and other similar cooking equipment;

b. sinks that are used for pre-rinsing or washing pots, pans, dishes, cutlery or kitchen utensils, or to perform other similar washing activities;

c. self-cleaning exhaust hoods installed over cooking equipment;

d. garbage compactors, if their usage results in a discharge, directly or indirectly into a sewer or sewage facility, of fats, oils and grease;

e. hub/funnel drains used to service fats, oils and grease bearing fixtures;

f. dishwashing equipment installed in a food sector establishment that is located in:

i. a building that was constructed on or after the date of adoption of this bylaw; or

ii. a space that was converted on or after the date of adoption of this bylaw, in order to support the function of a food sector establishment; and

g. any other plumbing equipment or device that discharges or conveys wastewater which contains or may be contaminated with fats, oils and grease.

8.3 The following in a food sector establishment must not be connected to a grease interceptor:

a. toilets and urinals; and

b. subject to section 8.4, food grinders, potato peelers and other similar equipment used for the preparation of food.

8.4 Food grinders, potato peelers and other similar equipment used in the preparation of food must be connected to a solids interceptor that is connected to a grease interceptor if the wastewater discharged from such food preparation equipment contains or may be contaminated with fats, oils and grease.

8.5 A garbage compactor used in connection with a food sector establishment but situated outside of the building or structure of that food sector establishment must:

a. be connected to a drain that is connected to a grease interceptor; and

b. prevent the mixing of storm water with the wastewater that is discharged into the drain connected to the grease interceptor.

8.6 Grease interceptors must not be located in a place or manner that obstructs or interferes with an officer's exercise of powers to ensure compliance with this bylaw, the Sewer Use Bylaw, or the *Environmental Management Act*.

8.7 All grease interceptors installed must be certified to:

a. Canadian Standards Association (CSA) B481 Series 12 "Hydro Mechanical Grease Interceptors," as amended from time to time;

b. American Society of Mechanical Engineers (ASME) A112.14.3 "Hydro Mechanical Grease Interceptors," as amended from time to time;

c. ASME A112.4.4 "Grease Removal Devices," as amended from time to time; or

d. International Association Plumbing and Mechanical Officials (IAPMO)/ American National Standards Institute (ANSI) Z1001 "Prefabricated Gravity Grease Interceptors," as amended from time to time, and have a minimum hydraulic retention time of one minute.

8.8 Despite section 8.7, if a grease interceptor does not meet requirements in section 8.7, then the grease interceptor installed must be rated for flow capacity according to an alternative methodology or standard approved by a Sewage Control Manager.

8.9 The sum of all assigned flow rates of all plumbing fixtures connected to a grease interceptor, as determined in accordance with the Approved Grease Interceptor Selection Methodology, must not exceed the grease interceptor's rated flow capacity.

8.10 If the manufacturer of a grease interceptor prescribes the use of a flow control fitting with the grease interceptor, the grease interceptor must have the prescribed flow control fitting.

8.11 The size of a flow control fitting that is required to be used with a grease interceptor must not exceed the rated flow capacity of the grease interceptor.

8.12 An officer or a Sewage Control Manager may require anything related to the discharge of wastewater from a food sector establishment, including any machine, structure, material or equipment on the premises that is being inspected, to be operated, used, set in motion, or opened under conditions specified by the officer or Sewage Control Manager.

9. Labelling Requirements

9.1 The rated flow capacity of a grease interceptor must be:

a. permanently labelled on the grease interceptor or at a location deemed appropriate by an officer or a Sewage Control Manager and be visible and clearly legible at all times; or

b. shown to an officer or a Sewage Control Manager upon request, in written documentation issued by the manufacturer of the grease interceptor.

10. Grease Interceptor Maintenance

10.1 Every grease interceptor must be examined and cleaned in accordance with this section 10.

10.2 A grease interceptor must be examined, and cleaned:

a. at least once every 90 consecutive days; or

b. when the total thickness of fats, oils and grease and solids in the grease interceptor is equal to 25% or more of the wastewater depth,

whichever occurs earlier, or at any time or frequency that a Sewage Control Manager, by order, deems either sufficient or necessary to meet the purposes of section 1 of the Sewer Use Bylaw.

10.3 Examination and cleaning of a grease interceptor must include:

a. full evacuation of the grease interceptor;

b. clearing of all inlet, outlet, and air relief ports of any obstructions or other matter that may interfere with the proper functioning of the grease interceptor;

c. examination of all baffles, seals, and internal components for damage and other defects or conditions that may interfere with the proper functioning of the grease interceptor; and

d. replacement or repair of any damaged components and other defects or conditions that may interfere with the proper functioning of the grease interceptor.

10.4 Fats, oils and grease evacuated from a grease interceptor during the examination and cleaning required under this section 10 must not, directly or indirectly, be discharged:

a. in any form or manner, into the environment or into any sewer or storm sewer; or

b. liquid form, into a municipal solid waste collection system.

11. Record Keeping

11.1 For each examination and cleaning required to be performed under section 10, every owner or operator of a food sector establishment must:

a. keep and maintain on the premises a written record of the date of the examination, cleaning, and maintenance, with detailed descriptions of the types and quantities of matter evacuated;

b. keep each record for at least two years after the year in which the record was first made; and

c. make such records available for inspection by an officer or a Sewage Control Manager upon request.

12. Fees

12.1 If a Sewage Control Manager deems that any of the following inspection actions are required to ensure compliance with this bylaw, the owner or operator of a food sector establishment must pay the following fees set out in Table 1:

Table 1

Inspection action	Amount
a. Re-inspection	$500
b. Sampling and analyses	$300

12.2 With respect to the fees payable under section 12.1:

a. any fees not paid within 30 days of the invoice date will be subject to a monthly interest charge of 1.25% per month (15% per annum); and

b. if any fees for re-inspection or for sampling and analyses are not paid within 90 days of the due date, the food sector establishment will be in non-compliance with this bylaw and the discharge to a sewer will be unauthorized.

13. Offences

13.1 A person who contravenes any provision of this bylaw, other than the provisions listed in section 13.2, commits an offence and is liable to a fine not exceeding $10,000.

13.2 A person who contravenes any of the following commits an offence and is liable to a minimum fine of $2,000 and a maximum fine not exceeding $10,000:

a. section 8.1 [*installation of a grease interceptor*];

b. section 8.2 [*connection to a grease interceptor*];

c. section 8.9 [*flow from all plumbing fixtures connected to the grease interceptor*];

d. section 10.1[*examination and cleaning*].

13.3 If an offence under section 13.1 continues for more than one day, separate fines, each not exceeding the maximum fine for that offence, may be imposed for each day the offence continues.

13.4 If an offence under section 13.2 continues for more than one day, separate fines, each not less than the minimum fine for that offence and not exceeding the maximum fine for that offence, may be imposed for each day the offence continues.

13.5 Nothing in this bylaw limits a Sewage Control Manager or the District from utilizing any other remedy that would otherwise be available at law.

14. General Conditions

14.1 If any portion of this bylaw is deemed *ultra vires*, illegal, invalid, or unenforceable in any way, in whole or in part, by a court or tribunal of competent jurisdiction, such decision shall not invalidate or void the remainder of this bylaw. Any portion so held to be *ultra vires*, illegal, invalid, or unenforceable shall be deemed to be reduced in scope so as to be valid and enforceable, or in the alternative to have been stricken therefrom with the same force and effect as if such portion had never been included in this bylaw.

14.2 Nothing in this bylaw is intended to conflict with the *Environmental Management Act*. A conflict does not exist solely because further restrictions or conditions are imposed by this bylaw or the Sewer Use Bylaw.

14.3 Words importing the singular number include the plural number and vice versa.

Read a first, second, and third time this _____ day of _____, _____.

Passed and finally adopted this _____ day of _____, _____.

_____
George V. Harvie, Chair

_____
Dorothy Shermer, Corporate Officer

Food Sector Grease Interceptor Bylaw Update

Final Engagement Summary

Acknowledgements

Thank you to everyone who provided input on the Food Sector Grease Interceptor Bylaw update. Metro Vancouver embraces collaboration and innovation to provide sustainable regional services that contribute to a livable and resilient region and a healthy natural environment for current and future generations.

The purpose of this engagement was to find ways to enhance compliance with this bylaw that protects private property, public sewer infrastructure, human health, and the environment. Engagement sought to identify factors hindering compliance and find potential bylaw amendments that could increase compliance.

We appreciate your time, and the insights and comments you shared with us during the three phases of engagement.

About Metro Vancouver

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

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metrovancouver.org
September 2023

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About the Food Sector Grease Interceptor Bylaw

When fats, oils, and grease are washed down sinks and drains, they harden and lead to serious blockages. This can cause significant and costly damage to residential and commercial plumbing systems and the region's sewer system. It can also cause harm to the environment through sewer overflows. The main source of grease entering the sewer system comes from food sector establishments and residential homes. Metro Vancouver works to inform residents about the harmful effects of grease, and their role in disposing of it using their green bin, through **public education campaigns**. To manage the fats, oils, and grease coming from food sector establishments, Metro Vancouver adopted the *Food Sector Grease Interceptor Bylaw* (No. 268) in 2012. This bylaw requires food sector establishments to have all grease-bearing fixtures connected to an appropriately sized and maintained grease interceptor. Grease interceptors separate fats, oils, and grease from wastewater and help prevent them from entering the sewer system. It's also important to note that having a properly-sized grease interceptor can protect businesses against grease blockages and the potential for resulting sewage backups, and as a result, the costs for plumbing repairs and any necessary renovations.

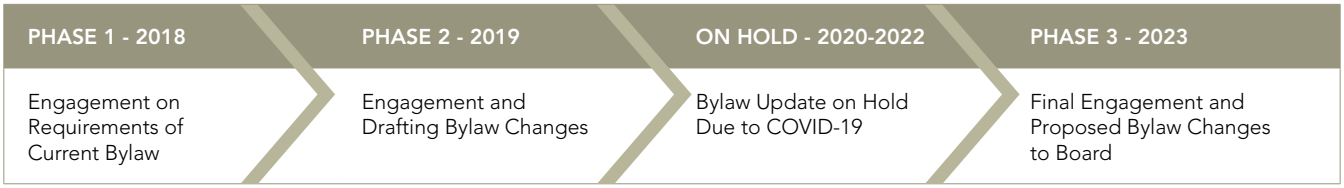
About the Engagement Program

A review of the original Food Sector Grease Interceptor Bylaw (No. 268) was initiated in spring 2018. The first phase of engagement was comprised of small group meetings in late 2018 and early 2019 to discuss technical details of the bylaw, and stakeholders' experience of the current bylaw requirements. A meeting specific to Mandarin-speaking food service industry representatives was hosted based on interest from the community The second phase occurred in late 2019 and involved engagement through working group and technical group meetings, as well as an online stakeholder survey. **During this phase of engagement, several proposed bylaw changes were developed, discussed, and generally agreed upon**.

The third and final phase of engagement on the proposed bylaw changes was intended to conclude in 2020, with engagement results and recommended bylaw amendments to be presented to Metro Vancouver's Liquid Waste Committee and Board for review and approval. However, due to the COVID-19 pandemic, the conclusion of the bylaw review was put on hold, allowing the food services sector to concentrate on day-to-day business during a difficult time.

Metro Vancouver resumed the bylaw review and update in February 2023. A summary outlining the key themes and feedback received during the first two phases of engagement was posted online, and current members of industry were invited to comment on the proposed changes through an online survey. Stakeholders included members of the food services industry, grease interceptor manufacturers and maintenance providers, and building maintenance providers and associations. A complete list of stakeholders is included in the table below.

This report summarizes input received during all three phases of engagement, and informs the proposed bylaw changes put forward for Metro Vancouver's Liquid Waste Committee and Board's review and consideration.



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

ACTIVITY	AUDIENCE	TIMING	MEDIUM
Invitation to take part in the bylaw update and engagement	Food service industry and associations	Phase 1 2018	Letters, emails, phone calls, association newsletters and websites, Metro Vancouver website
Small group meetings	Representatives from: small/medium food service business associations, food service chains, grease haulers and maintenance providers, plumbers, grease interceptor manufacturers and maintenance providers, food waste-to-energy manufacturers, institutional kitchens, culinary schools, grocery stores, food trucks, digester and grinder industry, Building Officials Association of British Columbia	Phase 1 September – October 2018	In-person meetings
Non-English speaking meetings (offered based on interest from the community)	Mandarin-speaking food service industry representatives	Phase 1 October 2018	In-person meeting
Online survey	Food service industry and associations	Phase 1 Early 2019	Website
Working group meeting	Representatives from the following areas of the food sector industry: small restaurants, Mandarin-speaking food sector establishments, food sector establishment chains, plumbers, grease interceptor manufacturers and maintenance providers, grease haulers and biogas processors, food service business associations, City of Vancouver environmental bylaw enforcement	Phase 2 October 2019	In-person meeting
Technical group meeting	Technical representatives from the following groups: plumbers, grease interceptor manufacturers and maintenance providers, grease haulers and food waste energy processors	Phase 2 November 2019	In-person meeting
Municipal engagement	Local Government Fats, Oils, and Grease Working Group, Regional Engineer Advisory Committee – Liquid Waste Subcommittee	Phase 1 & 2 2018 – 2019	Presentations and discussion at regular meetings
Online survey	Food service industry and associations, grease haulers and maintenance providers, plumbers, grease interceptor manufacturers and maintenance providers, institutional kitchens, culinary schools, grocery stores, food trucks, Building Officials Association of British Columbia	Phase 3 February 2023	Website

Engagement Promotion

Engagement was promoted via letters, postcards, and emails to more than 17,000 stakeholders, and on the Metro Vancouver website. In addition to Metro Vancouver promotion, industry associations shared information about engagement opportunities with their membership.

Website

A dedicated project webpage was used to highlight information about the proposed bylaw changes and engagement. As of May 2023, there have been 4,406 visits to the project website, and 3,329 unique page views.

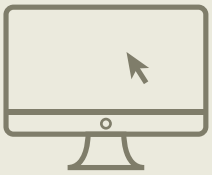
Online Surveys

The opportunity to provide feedback in the online surveys was promoted on the Metro Vancouver website, by email and by postcard to more than 17,000 businesses and interested stakeholders, and at all meetings.

What We Did

We conducted the following activities throughout engagement:

17,350
stakeholders contacted through letters and emails



4,406
visits to project website

3,329
unique page views

62
online survey responses

What We Heard and Metro Vancouver Response

These are some of the key themes we heard during engagement.

INTEREST AREA	WHAT WE HEARD AND HOW WE'VE RESPONDED
Desire for exemptions	**What we heard:** Requests for Metro Vancouver to consider bylaw exemptions – allowing businesses without grease interceptors, or insufficiently-sized interceptors, to remain that way if they were in existence prior to the introduction of the 2012 bylaw requirements. **Response:** Because we're seeking continual system improvements, no exemptions are being considered. The bylaw is in place to protect the environment, sewer system, sewer workers, and the public. However, to support the food service industry, food sector establishments with existing, non-conforming grease interceptors may submit a compliance plan to Metro Vancouver for consideration, allowing them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule.
Installation and upgrade costs	**What we heard:** Concerns about the cost of renovations to install or upgrade grease interceptors, as well as the potential lost revenue should the business need to close during these renovations. **Response:** Food sector establishments with existing, non-conforming grease interceptors may submit a compliance plan to Metro Vancouver for consideration, allowing them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule.
Installation and upgrade costs, and the impacts of COVID-19	**What we heard:** Restaurants faced significant financial difficulties during the COVID-19 pandemic, which they are still recovering from. Some accessed a federal Canada Emergency Business Account (CEBA) loan to remain operational and will need to pay back these loans in the coming years. The cost to install or upgrade grease interceptors to be in compliance with the bylaw could negatively impact their business in the face of multiple and competing financial demands. **Response:** The proposed bylaw change removes some requirements from the previous bylaw (removing requirement for mop sinks and floor drains to be connected to a grease interceptor), intended to help lower the cost of grease interceptor installation. In many cases, the interceptor could be installed under the sink, rather than recessed in the floor, removing the need for extensive retrofits. In addition, food sector establishments may submit a compliance plan that will allow them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule.
Updating re-inspection and sampling fees	**What we heard:** Concerns about increasing re-inspection and sampling fees, and the financial impact the increase could have on businesses. In other cases, questions about the financial justification for the fee increases. **Response:** Metro Vancouver will generate no profit as a result of increases to the fees. The fees have not been updated since 2012, when the bylaw was first put in place. The increase is to better recover the operational costs of re-inspection and sampling, such as: staff time conducting work at the business and preparing inspection reports; laboratory analyses; and, vehicle mileage and gas. The proposed bylaw changes would increase the re-inspection fee from $300 to $500 (a fee charged to businesses that are in violation of the bylaw and require a re-inspection to confirm compliance). The sampling fee (charged in the event an enforcement officer needs to take samples of grease interceptor discharge) would increase from $150 to $300.

INTEREST AREA	WHAT WE HEARD AND HOW WE'VE RESPONDED
Residential versus commercial sources of fats, oils, and grease	**What we heard:** Residential dwellings are a significant source of fats, oils, and grease in the wastewater system, and should also be addressed. **Response:** Metro Vancouver regularly runs **public education campaign**s about keeping fats, oils, and grease out of the wastewater system. The 2022 campaign (which included a campaign website, television and online advertising, and ads on social media, YouTube, and Google) reached more than 800,000 residents
Alignment of standards and regulations	**What we heard:** There is inconsistency between municipal, regional, and provincial jurisdictions when it comes to the interpretation of requirements and implementation. Suggestions made to establish a central resource that could be accessed by stakeholders to coordinate with the various jurisdictions—for example, when there is confusion regarding the precedence of building code versus bylaw requirements. Language around sizing requirements is unclear. **Response:** Detailed information on selecting and sizing the right grease interceptor for businesses can be found on the Metro Vancouver **website**. Metro Vancouver will consider creating a central database of the different jurisdictional requirements relevant to grease interceptors.
Fixtures	**What we heard:** Questions and concerns about what fixtures are or are not required to be connected to a grease interceptor (dishwashers, glass washers and sanitizers, mop sinks, and floor drains). **Response:** Under the proposed bylaw changes: • Floor drains and mop sinks will not have to be connected to a grease interceptor. This change is being made based on feedback from industry and because these fixtures are not considered a significant source of grease. Removing this requirement helps reduce the financial burden of retrofits. • Dishwashers and funnel/hub drains will have to be connected to a grease interceptor (as they are grease-bearing fixtures). However, to help reduce the burden of retrofits, the dishwasher requirement will only apply to new builds and spaces newly converted to support food service. • Hand sinks can be connected to a grease interceptor, but it is not a requirement. This change is being made based on feedback from industry, as many food sector establishments have hand sinks connected to grease interceptors, which is not necessary, but generally harmless. Removing the requirement that they must not be connected to the grease interceptor helps reduce the burden of extensive retrofits.
Sizing	**What we heard:** Grease interceptor sizing requirements are challenging for small locations. Space is at a premium and it can be difficult to install interceptors to current standards in smaller businesses. **Response:** Metro Vancouver reviewed and revised the **Grease Interceptor Selection Methodology** for grease interceptors in 2021. It uses 75 per cent of sink volume (instead of the previous 100 per cent) for determining the sizing of grease interceptors. As a result, smaller grease interceptors will generally be required.

INTEREST AREA	WHAT WE HEARD AND HOW WE'VE RESPONDED
Food grinders and digesters	**What we heard:** Questions about the regulation of food waste disposal units such as food grinders and digesters. **Response:** Food grinders are already regulated by the bylaw and are allowed — provided they are connected to a solids interceptor and then a grease interceptor. At this time, changes to how digesters and grinders are regulated under the bylaw are not being considered; however, Metro Vancouver is planning to collect more information to develop regulatory options for digester and grinder technologies in the future.
Markets and commissary kitchens	**What we heard:** Overall support for adding markets and commissary kitchens (a commercial kitchen rented by local food service operators, such as caterers and bakers) to the bylaw. Overall support for ensuring all food sector establishments are treated the same. **Response:** One of the proposed bylaw changes updates the definition of a food sector establishment to include markets and commissary kitchens. These are not explicitly listed in the current bylaw and this change would ensure that these emerging sectors are regulated alongside traditional restaurants to help protect the environment and the regional sewer system from fats, oils, and grease coming from these locations.
Increasing regulation	**What we heard:** Concern about increasing regulation, potentially resulting in unnecessary bureaucracy and red-tape for business-owners. **Response:** In large part, the bylaw changes are intended to reduce unnecessary regulation, by removing certain restrictions and requirements, thereby giving the food sector industry more flexibility to comply with the bylaw. For example, one of the changes removes the requirement for floor drains and mop sinks to be connected to a grease interceptor, as they generally pose a lower risk for sewer blockages. Removing this requirement helps reduce the burden of extensive retrofits since sub-floor construction may require additional structural and seismic considerations.
Fines and compliance	**What we heard:** The incentive to comply with the bylaw is low as inspection resources are limited, and fines are nominal and rare, particularly in comparison with the cost of renovations. Suggestion to provide a financial incentive program to encourage compliance, such as rebates for completing grease interceptor upgrades. **Response:** Metro Vancouver works first to encourage compliance through education and working with business owners. If there are instances of repeated non-compliance, Metro Vancouver has several tools to respond. Metro Vancouver recently obtained authority to levy financial penalties for non-compliance and is in the process of drafting new policies for this enforcement tool. Repeated non-compliance of the bylaw can result in prosecution. Financial incentives to improve compliance are not being considered, as having a properly-sized grease interceptor is a regulatory requirement to protect the sewer system and the environment.

INTEREST AREA	WHAT WE HEARD AND HOW WE'VE RESPONDED
Preferred hauler program	**What we heard:** A preferred hauler program was suggested, where approved grease interceptor maintenance providers could electronically submit confirmation that an establishment's grease interceptor is in compliance and being maintained. **Response:** While this suggestion is not being pursued as part of this bylaw update, Metro Vancouver may look at developing a voluntary hauler program or other initiatives in the future.
Efficacy of grease interceptor in high temperature dishwashers	**What we heard:** Questions about the new requirement to connect dishwashers (in new builds and spaces newly converted to food service only) and whether the high temperature of a dishwasher's wash and rinse water will liquefy grease, causing it to bypass the grease interceptor, and render the interceptor ineffective. **Response:** The high temperature of dishwashers may impact the efficacy of the grease interceptor to trap the grease coming from the dishwasher. However, as dishwashers are a source of grease, it is necessary to have them connected to a grease interceptor to trap as much grease as possible. To reduce the burden of extensive retrofits, this new requirement only applies to new builds and spaces newly converted to food service.
Location of grease interceptor	**What we heard:** Suggestion that grease interceptors be allowed to be installed outdoors. Suggestion that the best place to install a grease interceptor is by the sink in the kitchen, and concern that in some cases, grease interceptors are installed in hard to service areas of buildings, such as the basement or underground parking. Response: The bylaw allows for interceptors to be installed outside; this will not change. For installation of grease interceptors in harder to access areas of buildings, the proposed bylaw change that will remove the requirement to connect grease interceptors to mop sinks and floor drains should reduce the number of grease interceptors installed underground.
Maintenance requirements	**What we heard:** Request that Metro Vancouver reconsider the bylaw requirement that grease interceptors be cleaned every three months. **Response:** During a previous bylaw review, Metro Vancouver staff considered grease interceptor sizing based on how much grease a business generated; however, this would be difficult to assess accurately, and poses challenges for effective monitoring and enforcement, as food sector establishments experience high turnover, and grease production could change. For this reason, the three month cleaning requirement remains.

How Feedback Was Used

Informed by this feedback and other policy requirements, Metro Vancouver staff developed the proposed bylaw amendments considered by Metro Vancouver's Liquid Waste Committee and Board for approval in fall 2023.

INPUT CONSIDERATION SUMMARY REPORT

Glossary

Canadian Standards Association (CSA) is a not-for-profit standards development organization that develops and maintains consensus standards to help protect the health and safety of Canadians, enhance Canadians' quality of life, protect the environment, and facilitate trade.

Fats, oils, and grease (FOG) harden and lead to serious blockages when they are washed down sinks and drains. This can cause significant and costly damage to residential and commercial plumbing systems and the region's sewer system. It can also cause harm to the environment through sewer overflows.

Food sector establishments (FSEs) are any businesses involved in food preparation and service, discharging fats, oils and grease into the sewer system, such as restaurants, commissary kitchens, markets, and other similar establishments.

Food Sector Grease Interceptor (FSGI) Bylaw has been in place since 2012 to manage the fats, oils, and grease coming from food sector establishments by setting out requirements for all grease-bearing fixtures to be connected to an appropriately-sized and maintained grease interceptor.

Gallons per minute (GPM) is the unit of measurement for how fast liquid flows – in this case, through a plumbing system.

Grease interceptors (GIs) are devices installed as part of the plumbing system at food sector establishments that separate fats, oils, and grease from wastewater, helping to prevent them from entering the sewer system.

Greater Vancouver Sewerage and Drainage District (GVS&DD) is one of the four legal entities that make up Metro Vancouver, with the responsibility for providing regional sewerage and drainage services, while protecting human health and the environment.

Metro Vancouver (MV) 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.

Mixed commercial units (MCU) are buildings where offices or residences typically occupy upper floors, with commercial businesses occupying the space below.

Sewage Control Manager is a Metro Vancouver or City of Vancouver employee, appointed by the GVS&DD Board under the *Environmental Management Act* and the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw* No. 299, 2007 to regulate non-domestic discharges to sanitary sewers to protect human health, the environment, and the sewer system.

1. Phase 1 – Small Group Meetings and Online Survey (2018)

The following considerations were raised in 10 small group meetings, including one offered in Mandarin (held September – October 2018) and an online survey (held in early 2019), and reflect comments, questions, and issues provided. Similar questions, suggestions, and concerns have been grouped together for response from Metro Vancouver.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Exemptions				
1	Requests for exemption of businesses existing prior to 2012	Small/Medium Food Sector Establishments (FSE) working group (Sept 24, 2018) Chains and Business Associations working group (Sept 25, 2018) Mandarin FSE working group (Oct 2, 2018)	Consider exemptions for establishments without grease interceptors or insufficiently-sized grease interceptors who were doing business prior to the introduction of the 2012 bylaw requirements.	Exemptions are not being considered. The bylaw is in place to protect the environment, sewer system, sewer workers, and the public. To support the food service industry, food sector establishments with existing, non-conforming grease interceptors (GIs) may submit a compliance plan to Metro Vancouver (MV) for consideration, allowing them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule.
Cost of upgrades and maintenance				
2	Installation and upgrade costs	Small/Medium FSE working group (Sept 24, 2018) Chains and Business Associations working group (Sept 25, 2018) Mandarin FSE working group (Oct 2, 2018)	Cost of renovations, and loss of revenue due to business closure to make upgrades, creates barriers to compliance for some FSEs. Concern that restaurants cannot bear the high cost of renovations.	Food sector establishments with existing, non-conforming grease interceptors may submit a compliance plan to Metro Vancouver (MV) for consideration, allowing them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule. The cost of installing a GI is expected to decrease with the proposed bylaw change updating which fixtures must be connected to a GI. Not requiring mop sinks and floor drains to be connected means that interceptors can likely be installed under the sink, rather than recessed in the floor.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
3	Residential vs. commercial sources of fats, oil, and grease	Small/Medium FSE working group (Sept 24, 2018) Chains and Business Associations working group (Sept 25, 2018) Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Residential dwellings are a source of fats, oil and grease (FOG) in the wastewater system.	MV works to inform residents about the harmful effects of grease and their role in disposing of it in their green bin through public education campaigns. To manage the fats, oils, and grease coming from food sector establishments, MV adopted the Food Sector Grease Interceptor (FSGI) Bylaw (No. 268). The scope of this bylaw does not include regulating residential dwellings. Based on feedback from municipalities, MV has identified "hot spot" areas where there are larger build-ups of FOG. These areas have a higher concentration of FSEs, which handle large volumes of foods containing FOG.
4	Design and planning for new builds	Small/Medium FSE working group (Sept 24, 2018) Chains and Business Associations working group (Sept 25, 2018) Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Developers and engineers are not adequately addressing grease interceptor requirements for new builds during planning and design, especially in mixed commercial units (MCU) that may have food sector tenants in the future.	MV will consider the creation of educational materials to share on the MV website that stakeholders such as building maintenance associations, developers, engineers, and municipal permitting/licensing staff can reference.
5	Fines	Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	The incentive for an FSE to implement high cost renovations to be compliant with the bylaw is low. The possibility and/or frequency of inspections, and the cost of potential fines are not considered a deterrent.	MV recently obtained authority to levy financial penalties for non-compliance and is in the process of drafting new policies for this enforcement tool.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Selection (Sizing)				
6	Methodology and bylaw language	Small/Medium FSE working group (Sept 24, 2018) Chains and Business Associations working group (Sept 25, 2018) Mandarin FSE working group (Oct 2, 2018) Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Language around GI sizing requirements is unclear. Consideration should be given to adopting Canadian Standards Association (CSA) standards.	In response to feedback received from industry representatives during this engagement, MV reviewed and revised the sizing methodology for GIs in March 2021. It is now called the Grease Interceptor Selection Methodology, and uses 75 per cent of sink volume for determining the sizing of GIs (compared to 100 per cent previously). The Grease Interceptor (GI) Selection Methodology can be found here: https://metrovancouver.org/services/liquid-waste/Documents/approved-grease-interceptor-selection-methodology.pdf Please note that MV plans to further revise the methodology in the near future to address GIs capable of a rated flow of over 100 US gallons per minute (GPM).
Fixtures				
7	Connected fixture requirements	Chains and Business Associations working group (Sept 25, 2018) Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Questions about the rationale for requiring dishwashers, glass washers, and sanitizers to be attached to a grease interceptor, as hot water can reduce the efficacy of a GI.	Glass washers and sanitizers are not required to be attached to a GI. Dishwashers (in new builds or spaces converted to FSEs) are required to be connected to a grease interceptor as they are grease-bearing fixtures.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
8	Connected fixture requirements	Chains and Business Associations working group (Sept 25, 2018) Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Concern about the current bylaw's requirement for mop sinks and floor drains to be connected to GIs.	We are proposing that mop sinks and floor drains do not require a connection unless they are being used for FOG disposal.
Regulatory Requirements				
9	Inconsistency between provincial, municipal and regional jurisdictions	Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Comments about the inconsistency among municipal, regional, and provincial jurisdictions, with differing interpretations of requirements and implementation. Lack of coordination between jurisdictions has resulted in work delays. Engineers identified challenges in developing plans that incorporate existing grease interceptor sizing requirements. Suggestion to create a central resource that establishments could access to coordinate the various jurisdictional requirements.	MV will consider creating a central database on the MV website of the different jurisdictional requirements relevant to GIs.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
10	Installation and access	Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Some establishments are constrained by the amount of space available to install grease interceptors on their property.	In response to feedback received from industry representatives during this engagement, MV reviewed and revised the sizing methodology for interceptors in March 2021. It is now called the Grease Interceptor Selection Methodology, and uses 75 per cent of sink volume for determining the sizing of GIs (compared to 100 per cent previously). The Grease Interceptor (GI) Selection Methodology can be found here: https://metrovancouver.org/services/liquid-waste/Documents/approved-grease-interceptor-selection-methodology.pdf
11	Installation and access	Haulers and Maintenance Providers working group (Oct 3, 2018) Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Haulers and plumbers encounter access challenges, based on the location of the grease interceptor.	The proposed bylaw change updating which fixtures must be connected to a grease interceptor should improve access to newly installed GIs. Not requiring mop sinks and floor drains to be connected to a GI means that interceptors can likely be installed under the sink, rather than recessed in the floor.
12	Monitoring, reporting, and enforcement	Small/Medium FSE working group (Sept 24, 2018) Chains and Business Associations working group (Sept 25, 2018) Plumbers, Interceptor Maintenance Providers and Manufacturers working group (Oct 12, 2018)	Provide guidelines or certifications for hauler/maintenance companies. Create a reporting template for FSEs and haulers/plumbers. Develop an approved/preferred haulers list with qualified grease interceptor contractors. Plumbers and hauling companies can support monitoring and compliance.	Although not part of the bylaw review, based on this feedback, MV is investigating the possible development of a voluntary Preferred Hauler Program or other initiatives.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Increase Compliance				
13	Incentives	Small/Medium FSE working group (Sept 24 2018)	Create financial or economic incentives to help offset the investment required by FSEs to achieve compliance.	The bylaw, which has been in place since 2012, helps protect the environment, sewer system, sewer workers, and the public. MV is unable to offer financial incentives to support compliance.
14	Business licencing	Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Suggestion to include information on compliance with business licence renewals. Suggestion that approval of municipal business licences could be conditional on compliance with the grease interceptor bylaw.	As the business permitting system is the jurisdiction of municipalities, the suggested system may not work for all municipalities. The objective is to create a regional bylaw enforceable in all jurisdictions.
15	Education and awareness	Plumbers, Interceptor Maintenance Providers, and Manufacturers working group (Oct 12, 2018)	Plumbers, haulers, and health agencies could support with distribution of education materials.	Metro Vancouver would be pleased to share education materials as requested.
16	Digesters	Chains and Business Associations working group (Sept. 25, 2018) Plumbers, Interceptor Maintenance Providers and Manufacturers working group (Oct 12, 2018) Haulers and Maintenance Providers working groups (Oct 3, 2018)	There are very few examples of digesters used in the region. The units tend to be expensive and maintenance requirements are high. Some larger establishments have considered purchase/installation.	FSEs considering installation of such units should contact Metro Vancouver Environmental Regulation & Enforcement to determine any regulatory requirements under the Greater Vancouver Sewerage and Drainage District (GVS&DD) Sewer Use Bylaw for discharge to sewer.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
17	Bylaw awareness	Online survey (early 2019)	A variety of responses indicate the following points: - The majority of FSEs have a basic knowledge of the requirements of the bylaw, but a GI is not an active part of their business protocols until it needs to be serviced. - GIs are not a priority in regular FSE operations and they do not visit the Metro Vancouver website for information. - For FSE operators, the main source of GI information comes from those who work directly on their GI (haulers, maintenance providers, plumbers).	MV will investigate working with industry to develop educational materials for FSEs regarding GI maintenance requirements and make them available on the MV website, and upon request to plumbers, haulers and health agencies for distribution to their clients.

2. Phase 2 – Working Group and Municipal Meetings (2019)

The following considerations were raised during the working group meeting (October 22, 2019), the technical group meeting (November 4, 2019), the municipal group meeting (November 13, 2019), and individual stakeholder interviews (November 20, 2019), and reflect comments, questions, and issues provided. Similar

questions, suggestions and concerns have been grouped together for response from Metro Vancouver.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Selection (Sizing)				
18	Regulatory sizing disparity	Working Group (Oct. 22, 2019)	The Canadian Standards Association (CSA) doesn't test above 100 gallons per minute (GPM) and the sizing methodology can require 250 GPM. Any interceptor graded above 250 GPM is approved by the manufacturer, not CSA.	The proposed bylaw standards will allow other industry standards in addition to CSA, such as the American Society of Mechanical Engineers (ASME), International Association of Plumbing and Mechanical Officials (IAPMO), American National Standards Institute (ANSI) or alternative methods or standards approved by a Sewage Control Manager.
19	Educational resources	Working Group (Oct. 22, 2019)	Information sheets for sizing calculation should be made available to haulers/maintenance providers to determine proper sizing. Request to have tool that will also work offline.	In response to this feedback, the "Grease Interceptor Selection (Sizing) Tool" can be found on the Metro Vancouver Grease Interceptor Regulatory Program website: https://metrovancouver.org/services/environmental-regulation-enforcement/liquid-waste-regulatory-program/grease-interceptor-sizing-tool MV will consider creating an offline tool.
20	Sizing methodology	Technical Group (Nov. 4, 2019)	In-series interceptors (two connected GIs)) should be considered in the proposed sizing methodology.	The CSA standard and the current MV sizing methodology does not include in-series grease interceptors. These would need to be considered as one-off applications by the Sewage Control Manager.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
21	Sizing	Technical Group (Nov 4, 2019)	Request for consideration of GI sizing based on the grease production of a particular business (e.g. sandwich shop vs. pizza shop).	During a previous bylaw review, Metro Vancouver staff considered production-based grease interceptor sizing (e.g. basing GI sizing on how much grease a particular business generates), however that type of classification posed challenges for monitoring and enforcement as FSEs experience high turnover. Changes to existing businesses may increase or decrease their levels of FOG output.
22	Regulatory requirements	Municipal Meeting (Nov 13, 2019)	Alignment of sizing methodology with CSA standard will make things easier for inspections officials. Important to note that CSA sizing is a minimum and that a larger size unit can be required.	MV has aligned with CSA standard to create consistency across jurisdictions.
23	Enforcement	Municipal Meeting (Nov 13, 2019)	Ensuring sizing requirements are met can be challenging. Equipment can be replaced with a different size unit after a plumbing inspection.	MV acknowledges the challenges officers experience. The intent of the bylaw revisions is to provide FSEs more clarity and flexibility to encourage increased compliance.
24	Fixture specifications	Municipal Meeting (Nov 13, 2019)	The manufacturer's peak flow rates for fixtures, such as dishwashers, are used for determining sizing of grease interceptor.	MV supports this peak flow sizing methodology.
25	Stakeholder groups	Municipal Meeting (Nov 13, 2019)	The number of food trucks (i.e. size of client base) using a particular commissary kitchen needs to be considered when determining sizing of grease interceptor for such facilities. A specific definition for grease interceptors used for this purpose may be needed.	Comment noted. MV is planning to gather more information about food trucks and their operations before coming up with an appropriate regulatory approach for them. In the interim, if food truck owners/operators require guidance on the disposal of their FOG or greywater, please contact Metro Vancouver Environmental Regulation & Enforcement.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Regulatory Requirements				
26	Preferred haulers	Working Group (Oct 22, 2019)	If MV implements a software system that allows submission of maintenance records by FSE or maintenance providers, MV should take into consideration that haulers/maintenance providers can only act on the direction of their clients to submit documents.	Although not part of this bylaw review, MV is looking into the possible development of a voluntary Preferred Hauler Program or other initiatives.
27	Timeline	Working Group (Oct 22, 2019)	Questions about timing of proposed bylaw to come into effect.	The bylaw amendments are scheduled to go to the GVS&DD Board in Q3/Q4 2023for consideration. The new bylaw would come into effect once it is Board approved.
28	Regulatory requirements	Technical Group (Nov 4, 2019)	The BC Plumbing Code doesn't outline required sizing for grease interceptors.	The 2018 Plumbing Code now references the CSA standard for sizing. The previous version did not.
29	Regulatory requirements	Technical Group (Nov 4, 2019)	The CSA standard cuts off at 100 GPM rated flow. Will the limit be updated?	MV is continuing communication with CSA regarding updates to their standard. The Grease Interceptor Selection Methodology allows for other standards when rating GI flow capacities, including those over 100 GPM.
30	Industry standards	Technical Group (Nov 4, 2019)	Will the revised bylaw language remain flexible enough to incorporate new or updated industry standards?	The proposed bylaw amendments aim to make the bylaw language flexible. Future changes to industry standards can be incorporated through an administrative bylaw amendment that can be expedited through the Board.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
31	Jurisdiction requirements	Technical Group (Nov 4, 2019)	Is the Vancouver Building Bylaw included in references to the BC Building Code?	The Vancouver Building Bylaw is included when referencing the BC Building Code.
32	Timeline	Technical Group (Nov 4, 2019)	Is alignment between CSA and the new Building Code effective now?	Yes. The BC Building Code 2018 requires that GIs conform to the CSA B481.3 standard.
33	Stakeholders	Technical Group (Nov 4, 2019)	During your engagement process did Metro Vancouver consult with range hood operators and determine how they discharge their FOG? In some circumstances, hood cleaning providers will discharge into the floor drain during non-working hours.	MV met with several stakeholder groups, including GI maintenance providers, but did not consult with specific fixture manufacturers. Wastewater from manual hood cleaning should be collected for offsite waste management. Otherwise, if wastewater from manual hood cleaning is discharged to a floor drain, that floor drain must be connected to a GI.
34	Regulatory challenges	Technical Group (Nov 4, 2019)	Engineers encounter difficulty securing a "Will Comply" letter in situations where a building is designed to accommodate an FSE tenant, but a tenant has not yet been secured. Could you implement an approval for "Will Comply" letters for a minimum of 500 GPM rated flow to secure approval from an inspector?	We cannot issue letters of conformity without knowing the flow requirements, since the bylaw requires that GIs comply with sizing methodology based on the connected fixtures (a known volume). MV will consider further meetings with municipalities on this subject.
35	Compliance	Technical Group (Nov 4, 2019)	Does Metro Vancouver issue permits for grease interceptors to FSEs? Other jurisdictions have found this as an effective tool to enforce compliance.	FSEs in MV operate under the regulations of the bylaw, and permits are not issued. There would be significant resourcing implications to both FSEs and MV to implement a permitting system.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
36	Hauler regulation	Technical Group (Nov 4, 2019)	How are grease haulers/maintenance providers regulated in discharging grease?	MV does not have the authority to regulate haulers/maintenance providers, only those entities that discharge into the sewer system or at wastewater treatment plants. Haulers that discharge at MV's wastewater treatment plants are regulated under the GVS&DD Trucked Liquid Waste bylaw.
37	Alternate technologies	Technical Group (Nov 4, 2019)	Engineers are being asked to develop designs with digesters in conjunction with grease interceptors. Will these technologies be allowed?	FSEs considering installing these types of units should contact Metro Vancouver Environmental Regulation & Enforcement to determine any regulatory requirements for discharging to the sewer system under the GVS&DD Sewer Use Bylaw.
38	Alternate technologies	Technical Group (Nov 4, 2019)	Is industry prohibited from using enzymes in a grease interceptor?	The current bylaw prohibits the use of enzymes in a grease interceptor and their discharge into the sewer system. The revised bylaw will maintain this prohibition.
39	Regulatory protocol	Technical Group (Nov 4, 2019)	When proposed recommendations are presented to the Board, can the public oppose or comment at that time?	Anyone can apply to appear as a delegation before a Metro Vancouver Committee or Board to speak on a particular topic or agenda item. Information on the process is included on the MV website: Speaking to a Board or Committee (metrovancouver.org)
40	Alternate technologies	Stakeholder Interview (Nov 20, 2019)	Manufacturer concerns that the bylaw discourages certain grease removal technology as it requires floor drains and mop sinks to be connected to the GI.	In the proposed bylaw revision, floor drains and mop sinks are being removed from the list of fixtures that must be connected to a GI, unless they are being used for FOG disposal

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
41	Alternate technologies	Stakeholder Interview (Nov 20, 2019)	Manufacturer requested direction about specific GI technologies being accepted as part of the bylaw.	Any GI technology, or other FOG-removing technology must be demonstrated to meet all the requirements of the bylaw to be acceptable. As a regulator, Metro Vancouver does not promote one technology over another.
42	Regulatory applications	Stakeholder Interview (Nov 20, 2019)	Request for MV to provide clarity about the permitting process for new builds and renovations.	MV will continue to work with municipalities to ensure that their permitting processes for FSEs refers proponents to MV for questions about FSGI bylaw requirements.
43	Regulatory requirements	Municipal Meeting (Nov 13, 2019)	Plumbing officials will refer to the edition of the CSA Standard cited in the BC Plumbing Code, unless the Ministry of Municipal Affairs and Housing directs otherwise, which is unlikely. The next BC Plumbing Code update is anticipated to be in 2022.	MV will note the next revision of the BC Plumbing Code.
44	Exemption program	Municipal Meeting (Nov 13, 2019)	In regards to the proposed non-conforming grease interceptor program, the registration would need to be with the property, not the business, as there can be high turnover in the industry.	MV is no longer considering the previously proposed non-conforming grease interceptor program. MV will still allow food sector establishments with existing, non-conforming grease interceptors to submit a compliance plan to Metro Vancouver for consideration. The plan will need to include details on proposed modifications and an implementation schedule.
45	Stakeholders	Municipal Meeting (Nov 13, 2019)	Communication with property owners/landlords about the FSGI bylaw and GI requirements will be important in addition to communication with businesses.	MV has resources and information on its website about the FSGI bylaw and GI requirements. It is the responsibility of individual FSEs to ensure they are compliant with bylaw conditions.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
46	Education and awareness	Municipal Meeting (Nov 13, 2019)	Often, prospective property or business owners are not aware of what upgrades will be required to bring the premises in compliance with applicable bylaws and codes.	MV has resources and information on its website about the FSGI bylaw and GI requirements. Before purchase, prospective buyers of an FSE facility should determine any outstanding regulatory requirements, including those under the FSGI bylaw.
Increase Compliance				
47	Enforcement	Working Group (Oct 22, 2019)	Clarity around enforcement mechanisms is needed. Haulers and maintenance providers are able to identify undersized or non-compliant units, but smaller customers may not be motivated to comply if upgrade costs outweigh enforcement penalties.	The inspection process starts with an enforcement officer conducting a site visit. Any issues of non-compliance are discussed; MV then sends a formal letter itemizing compliance issues. Should an FSE continue to be non-compliant, MV works through the plumbing and building codes to encourage compliance. MV is allowing FSEs with existing, non-conforming grease interceptors to submit a compliance plan to Metro Vancouver for consideration. The plan will need to include details on proposed modifications and an implementation schedule.
48	Effectiveness of proposed amendments	Technical Group (Nov 4, 2019)	Will the proposed revisions reduce the amount of grease entering the system?	The proposed changes aim to increase compliance by improving clarity and removing restrictions that have minimal impact on FOG production. Achieving greater compliance would help reduce the amount of grease entering the system.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
49	Compliance and enforcement	Technical Group (Nov 4, 2019)	Has Metro Vancouver considered something similar to the back-flow prevention system?	The bylaw requires grease interceptor maintenance records be kept on the premises. A robust program similar to the back-flow prevention system (a program in some jurisdictions that requires the testing of back flow preventers and submission of the test results) would require significant resources.
Retroactivity				
50	Timeline	Technical Group (Nov 4, 2019)	Do these proposed bylaw changes apply to existing GIs? Is this proposal an idea or is it currently in effect?	The 2012 bylaw already requires all FSEs to have a properly-sized GI installed and maintained. That is not changing. The proposed bylaw revisions add clarity and flexibility to the existing bylaw and will be presented to the Board for their consideration. These revisions will apply to all FSEs and GIs (new or existing) and go into effect once Board approval is obtained.
51	Timeline	Technical Group (Nov 4, 2019)	Is the recommendation to continue normal operations until the bylaw is adopted?	The current bylaw is in effect until the new bylaw is voted on by the Board, likely in Q3/Q4 2023.
Fixtures				

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
52	Connected fixtures	Working Group (Oct 22, 2019)	Floor drains and mop sinks are not generally high generators of FOG. Suggestion to remove the requirement for their connection to a GI.	Based on this feedback, MV is proposing to remove this requirement from the bylaw. The following fixtures will not be required to connect to a grease interceptor: - Floor drains used only to convey water or wastewater from wash downs and spills - Mop sinks or janitor sinks used solely for washing and cleaning purposes - Hand sinks Note, these fixtures are only exempt if they are not attached to a grease bearing fixture.
53	Stakeholder groups	Technical Group (Nov 4, 2019)	Has Metro Vancouver considered regulating the use of food waste disposal units?	Food grinders are regulated by the BC Plumbing Code 2018 and are allowed by the FSGI bylaw provided they are connected to a solids interceptor followed by a GI.
54	Fixture specifications	Technical Group (Nov 4, 2019)	When it comes to floor drains and mop sinks, can Metro Vancouver confirm the proposed revisions will remove simultaneous (all fixtures drain at once) versus non-simultaneous flow when accounting for GI sizing?	The proposed bylaw amendments remove the requirement for mop sinks and floor drains to be connected to a GI unless the are attached to a grease-bearing fixture. Existing mop sinks and floor drains can stay connected, as long as they are accounted for as non-simultaneous flows.
55	Fixture specifications	Technical Group (Nov 4, 2019)	Can Metro Vancouver confirm that the new bylaw requirements will align with CSA load standard of 75 per cent and will still be requiring one-minute drain time?	Yes. MV's Grease Interceptor Selection Methodology aligns with CSA standard of 75 per cent for sinks and will still require a one-minute drain time.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
56	Connected fixtures	Technical Group (Nov 4, 2019)	What are the requirements regarding existing kitchens that require new fixtures, such as dishwashers?	Any new grease-bearing fixture in an existing kitchen must be connected to a GI (a list of fixtures that must be connected to a GI is included in the bylaw). The only exception is dishwashing equipment. New dishwashers being installed in existing kitchens do not have to be connected to a GI – this is to reduce the burden of extensive retrofits on existing businesses. Dishwashers in new builds or spaces newly converted to food service, however, must connect to the GI.
57	Fixture specifications	Technical Group (Nov 4, 2019)	Will the rate of flow for dishwashers be determined by the manufacturers' specifications on discharge? And in cases where a pre-rinse sink is upstream of the dishwasher, will both fixtures require connection?	The rate of flow is determined by the manufacturer's specifications and both fixtures need to connect to a grease interceptor.
58	Fixture's intended purpose	Technical Group (Nov 4, 2019)	How will Metro Vancouver approach fixtures that are not being used as specified by the manufacturer?	At the inspecting officer's discretion, any grease-bearing fixture can be required to be connected to a GI, despite manufacturer specifications. For example, if a grease-bearing fixture is connected to a floor drain, that drain or fixture must be connected to a GI.
60	Grease interceptor specifications	Technical Group (Nov 4, 2019)	Generally, engineers will include in-series interceptors to increase capacity that can't be achieved through one unit. Often seen in large restaurants that need higher capacity and cannot get it through one GI. Some engineering firms have designs for in-series interceptors. Will the new bylaw consider allowing in-series grease interceptor?	To have an in-series interceptor considered, engineering firms must submit their designs in an application to the Sewage Control Manager for consideration.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
61	Other technologies	Technical Group (Nov 4, 2019)	What is Metro Vancouver's policy for units that separate FOG at source?	The bylaw focuses on GIs as the most commonly used technology to remove FOG from the wastewater stream. FSEs interested in using an alternative technology that separates FOG at the source should contact Metro Vancouver Environmental Regulation & Enforcement to discuss details specific to that technology.
62	Multiple FSEs per grease interceptor	Technical Group (Nov 4, 2019)	Does the current bylaw, or the revisions proposed, address FSEs sharing a grease interceptor? Many jurisdictions do not allow GIs to be shared.	The bylaw and the proposed changes allow for multiple FSEs to use the same GI. Any GI that is connected to multiple establishments must comply with sizing methodology based on flows from all connected fixtures. Shopping malls often have several FSEs using the same GI. In some cases, these FSEs have a smaller GI installed directly on their premises that leads to a larger GI maintained by the mall.
63	Maintenance	Technical Group (Nov 4, 2019)	Does MV have a way to specify the maintenance schedule of individual FSEs? A potential issue with the required 90-day maintenance schedule is that some FSEs may interpret that minimum as the only requirement and not monitor the grease interceptor, as needed.	The maintenance schedule of 90 days is the maximum amount of time an FSE can allow between GI maintenance, in combination with maintaining less than 25 per cent FOG and solids levels at any given time. FSEs must ensure their GI is compliant and being maintained properly. Many FSEs rely upon their maintenance provider to determine FOG percentage levels. The Sewage Control Manager can also direct FSEs to examine and clean a GI at any time.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
64	Maintenance	Technical Group (Nov 4, 2019)	The challenge with the 25 percent capacity maintenance requirement is that newer technologies are able to hold a higher percentage of FOG without reaching capacity. An FSE owner who invested in a higher capacity GI to prevent additional maintenance costs is still being required to pay for maintenance at 25 per cent FOG levels, paying for unnecessary maintenance and losing their investment in better technology. The standards proposed appear to cater to lower capacity grease interceptors and don't take into account newer technologies with higher capacities. CSA dictates cleaning a grease interceptor every four weeks, but this standard is not in a mandatory section. Suggestion to set the maintenance schedule as either 90 days, or 25 per cent of capacity, or to the manufacturer instructions. For those using manufacturers' instructions, the bylaw would rely on those instructions to set the maintenance schedule. Maintenance requirements could be in accordance with manufacturers recommendations. Accepted manufacturers could be approved by the Sewage Control Manager for a different percentage of capacity.	The Sewage Control Manager has the flexibility to make these kinds of decisions. The FSGI bylaw is a set of rules that apply in most situations, and allows for consideration of exceptions where applicable. MV will consider higher capacity GI percentages in accordance with manufacturers' instructions. The FSE would need to demonstrate compliance according to manufacturers' maintenance requirements to enforcement officers. To advocate for consistency across jurisdictions, companies are advised to write to the CSA and request that the percentages of higher capacity GIs be written into a Canadian standard so Sewage Control Managers across the country can rely on the same thing.
65	Maintenance	Technical Group (Nov 4, 2019)	Who is measuring FOG percentages in GIs?	The FSE is responsible for proper maintenance and monitoring of their GI. Based on engagement feedback, FSEs primarily rely on their maintenance provider to inform them of their GI's FOG percentage levels.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
66	Jurisdiction regulatory requirements	Municipal Meeting (Nov 13, 2019)	If the local jurisdiction requires dishwashers to connect to a GI, then Section 5.3 of the CSA Standard is triggered, which says that the dishwasher must be served by a dedicated grease interceptor. A separate grease interceptor for the dishwasher is preferred due to the heat of the water.	The proposed bylaw revision requires dishwashers in new builds (or newly converted spaces) to connect to a GI, but it does not have to be dedicated. FSEs must follow any municipal requirements for dedicated dishwasher GIs.
67	Connected fixtures	Municipal Meeting (Nov 13, 2019)	Why are mop sinks not required? Inspectors frequently witness these sinks being used for cleaning.	Findings from inspections show that most FSEs use mop sinks for general cleaning, not cleaning grease-laden items. The proposed bylaw change still requires GI connection if a mop sink or floor drain is used to dispose of wastewater containing FOG. Enforcement officers can require connection if an inspection reveals this to be the case.
68	Connected fixtures	Municipal Meeting (Nov 13, 2019)	The BC Plumbing Code says that connection of mop sinks is not required if the mop sink is not located in a kitchen.	Under the proposed bylaw amendments, a mop sink will not be required to connect to a grease interceptor in either case.
69	Connected fixtures	Municipal Meeting (Nov 13, 2019)	Connecting mop sinks to a GI should be a requirement in new builds or if doing extensive renovations, as there is ability in design process to accommodate placement of the grease interceptor.	MV has determined that, in general, only a small amount of FOG enters the system via mop sinks. The proposed bylaw amendment will not require a connection to a GI.
70	Alternate technologies	Municipal Meeting (Nov 13, 2019)	How much maintenance is required for food grinders and digesters?	There are no requirements in the bylaw for food grinder/digester maintenance.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
71	Alternate technologies	Municipal Meeting (Nov 13, 2019)	The BC Plumbing Code defines a "fixture" as something that discharges sewage or a substance that is not "clear water waste", so food grinders and digesters fall under the definition of a "fixture". Fixtures have to conform to the standards in the BC Plumbing Code. Food grinders and digesters could be considered an "alternative solution" provided they meet the functional statements/objectives/intent of that section of the BC Plumbing Code.	From a bylaw perspective, MV needs to determine if the discharge from food grinders and digesters is higher strength waste before determining the potential regulatory approaches for these systems.
72	Alternate technologies	Municipal Meeting (Nov 13, 2019)	Fraser Health may have some regulation or requirements around food grinders and digesters, as the health officers review each kitchen plan for compliance.	Comment noted.
Cost of upgrades and maintenance				
73	Fees	Working Group (Oct 22, 2019)	Currently FSE owners/operators are paying a large amount of fees to various regulators.	Fees associated with the FSGI bylaw are designed to recover operational costs associated with inspections and sampling, there is no profit to MV.
74	Grease interceptor specifications	Municipal Meeting (Nov 13, 2019)	Questions have been raised about whether grease interceptors are fireproof.	If a building's classification requires non-combustible building materials, a GI that is rated non-combustible is required.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
75	Regulatory requirements	Municipal Meeting (Nov 13, 2019)	Do the proposed bylaw changes apply to new builds and existing construction? This is different from the BC Plumbing Code, which only applies to new construction.	A distinction must be made between plumbing or building codes and the FSGI bylaw. Plumbing and building codes apply to new construction and are not retroactive (i.e. do not apply to pre-existing buildings. The FSGI bylaw is an environmental regulation and applies to all new and existing kitchens. Its purpose is to prevent FOG from entering municipal and regional sewers and doing harm to the sewer system and the environment.

3. Phase 3 – Correspondence and Online Survey (2023)

The following considerations were raised in correspondence and via the online stakeholder survey (held February 17 – March 10, 2023) and reflect comments, questions, and issues provided. Similar questions, suggestions, and concerns have been grouped together for response from Metro Vancouver.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Updating definitions of a food sector establishment				
76	Markets and commissary kitchens	Online stakeholder survey (Feb 17 to March 10, 2023)	Support for adding markets and commissary kitchens to the bylaw. All food sector facilities should share the same rules. A good way to protect the sewer system.	Comment noted.
77	Adding more regulations	Online stakeholder survey (Feb 17 to March 10, 2023)	Adding more regulation, even to level the playing field, is worrying. Would prefer to see less regulation in general.	The proposed changes to the definition of FSEs will not add more regulation, but rather expand and clarify the list of FSEs that fall under the definition.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Adding fixtures that must be connected to a grease interceptor				
78	Dishwashers (new builds and converted spaces only)	Online stakeholder survey (Feb 17 to March 10, 2023)	Support for only requiring dishwashers in new builds and spaces newly converted to food services to be connected to a grease interceptor, which will prevent businesses from having to do retro-fits. However, there is a recommendation in CSA B481/ASME A112.14.3 that states: "When the authority having jurisdiction determines a grease interceptor is required to service a dishwasher, it should be a dedicated grease interceptor." Should the bylaw clarify whether Metro Vancouver will be enforcing this, or allowing dishwasher waste to go into the main grease interceptor?	The proposed bylaw revision requires dishwashers in new builds (or newly converted spaces) to connect to a GI, which does not have to be dedicated. If there are municipal requirements requiring a dedicated GI, the more stringent requirements would supersede other requirements.
79	Dishwashers (new builds and converted spaces only)	Online stakeholder survey (Feb 17 to March 10, 2023)	Upgrade, addition, or replacement of old dishwashers within the premises becomes a grey area.	Dishwashers in new builds or spaces newly converted to food service must be connected to a GI. New, upgraded, or replaced dishwashers in existing FSEs will not require connection.
80	Connecting dishwasher to grease interceptor	Online stakeholder survey (Feb 17 to March 10, 2023)	Prohibitively expensive for small businesses.	The proposed changes will only require dishwashers in new builds or newly converted spaces to connect to a GI. However, it is important to note that the bylaw is in place to prevent FOG from entering the sewer system, which can otherwise lead to grease blockages and sewer backups at the FSE.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
81	Efficacy of grease interceptor in high temperature dishwashers	Online stakeholder survey (Feb 17 to March 10, 2023)	Will the high temperature of the dishwasher's wash and rinse water have an effect on the efficacy of the grease interceptor?	While MV has not done a detailed analysis, it is important to note that requiring dishwashers in new builds and converted spaces to connect to GIs was supported by the majority of stakeholders during engagement.
82	Adding more regulations	Online stakeholder survey (Feb 17 to March 10, 2023)	Adding more regulations is not advisable. Too much bureaucracy.	The fixtures that are being added to the "must be connected to a GI" section of the bylaw are intended to protect the environment, sewer system, sewer workers, and the public.
83	Funnel/hub drains	Online stakeholder survey (Feb 17 to March 10, 2023)	Hub drains can be easily converted into a floor drain.	Comment noted.
Removing fixtures that must not be connected to a grease interceptor				
84	Hand sinks	Online stakeholder survey (Feb 17 to March 10, 2023)	Connecting a hand sink to a GI is harmless but totally unnecessary, given the advantages are minimal. Additional cost in retrofitting, serving , inspecting will be ended up contributing to the final product cost.	The bylaw changes would remove the requirement that says that hand sinks must not be connected to grease interceptors. In other words, a business can have a hand sink connected to their grease interceptor – or not. Both situations will be allowed by the proposed bylaw changes, providing greater flexibility to FSEs.
85	Removing unnecessary regulation	Online stakeholder survey (Feb 17 to March 10, 2023)	Support for this change – removing a regulation because it was problematic.	Comment noted.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
86	Hand sinks	Online stakeholder survey (Feb 17 to March 10, 2023)	Grease will be dumped down hand sinks.	Any hand sink used to discharge FOG to sewer must be connected to a GI.
Interceptor selection flexibility				
87	Clear standards	Online stakeholder survey (Feb 17 to March 10, 2023)	The proposed change doesn't help to clarify or define the standard. Instead, it gives the power to Sewage Control Managers to give more red tape to businesses. Businesses need a clear black and white standard so that we can easily understand our responsibility, not an arbitrary standard which can change from manager to manager. There should be established options that comply with the Sewage Control Manager requirements, so individual case-by-case approvals do not need to be submitted.	MV's preference is that all FSEs install GIs that conform to the prescribed standards in the bylaw (e.g. CSA, etc.). We do not anticipate a significant amount of individual case-by-case approvals.
88	Sizing	Online stakeholder survey (Feb 17 to March 10, 2023)	GI sizing requirements are typically oversized and challenging for small locations. Space is at a premium and it can be challenging to install interceptors to current standards.	In response to feedback received during this engagement, MV reviewed and revised the GI sizing methodology in March 2021. It uses 75 per cent of sink volume (instead of 100 per cent previously) for sizing GIs and should result in smaller grease interceptors.
89	Standard integration	Online stakeholder survey (Feb 17 to March 10, 2023)	CSA B481 has been harmonized with ASME A112.14.3 creating a standard that is recognized on both sides of the border. Code integration is currently being worked on so this could be something for MV to consider.	The proposed bylaw changes allow for either CSA B481, ASME A112.14.3 or the harmonized standard.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
90	Removing unnecessary regulation	Online stakeholder survey (Feb 17 to March 10, 2023)	Support for this change, thinking of businesses, and not unnecessary regulation.	Comment noted.
Increasing fees				
91	Re-inspection and sampling fees	Online stakeholder survey (Feb 17 to March 10, 2023)	What is the breakdown of the proposed increase in the re-inspection and sampling fees? How do you justify the increase?	The fees, which have not been updated since 2012, only apply to non-compliant FSEs which require re-inspection and sampling. The increase in fees is meant to recover operational costs associated with inspections and sampling. Operational costs include-inspection, preparing inspection reports, vehicle mileage and gas, laboratory analyses, etc. There is no profit to MV as a result of the increase.
92	Re-inspection and sampling fees	Online stakeholder survey (Feb 17 to March 10, 2023)	More information about why fee increases will be put in to place will be helpful. What's changed since 2012 that the costs to conduct inspection have nearly doubled?	Fees only apply to non-compliant FSEs which require re-inspection and sampling. The original amount did not reflect the actual costs associated with inspections and sampling. The increase in fees is meant to recover operational costs. Operational costs include-inspection, preparing inspection reports, vehicle mileage and gas, laboratory analyses, etc. There is no profit to MV as a result of the increase.
93	Re-inspection and sampling fees	Online stakeholder survey (Feb 17 to March 10, 2023)	The current fee is sufficient. Higher fees should be applied to repeat offenders who violate the bylaw more than once. First timers should be given a chance to correct an issue instead of penalizing them.	The fees are not meant to be a penalty, they are meant to recover the actual costs of re-inspection or sampling.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
94	Re-inspection and sampling fees	Online stakeholder survey (Feb 17 to March 10, 2023)	Fees are prohibitively expensive for small businesses.	The fees, which have not been updated since 2012, only apply to non-compliant FSEs which require re-inspection and sampling. The increase in fees is meant to recover operational costs associated with inspections and sampling. Operational costs include-inspection, preparing inspection reports, vehicle mileage and gas, laboratory analyses, etc. There is no profit to MV as a result of the increase.
95	Re-inspection and sampling fees	Online stakeholder survey (Feb 17 to March 10, 2023)	Fees are too high. There shouldn't be any fees associated with this.	The fees are meant to recover the costs of re-inspection and sampling. There is no profit to MV.
96	Re-inspection and sampling fees	Online stakeholder survey (Feb 17 to March 10, 2023)	It is still difficult to operate a food service establishment after the very tough years during the COVID-19 pandemic and the current economic climate. Any increase in fees is very hard for a business to absorb. Increases of 40 or 50 per cent are very steep.	Metro Vancouver understands how challenging the last few years have been for the hospitality industry. For that reason, we put the FSGI bylaw review on hold for over two years, to allow food sector establishments to focus on day-to-day business during a difficult time. Ultimately, the bylaw is in place to protect the environment, sewer system, sewer workers, and the public, and must be observed. The fees only apply to non-compliant FSEs that require re-inspection and sampling.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Cost				
97	Cost and Canada Emergency Business Account (CEBA) loan	Online stakeholder survey (Feb 17 to March 10, 2023)	The timing of this proposed changes couldn't come at a worse time. Businesses are just coming out of tough times because of the pandemic and have to start paying off CEBA loans starting next year. The cost of this will break a lot of businesses.	Metro Vancouver understands how challenging the last few years have been for the hospitality industry. For that reason, we put the FSGI bylaw review on hold for over two years, to allow food sector establishments to focus on day-to-day business during a difficult time. Ultimately, the bylaw is in place to protect the environment, sewer system, sewer workers, and the public, and must be observed. To support the food service industry, FSEs may submit a compliance plan to Metro Vancouver for consideration, allowing them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule. The proposed bylaw changes removing mop sinks and floor drains from having to be connected to a GI should help lower the cost of installation as the GI can likely be installed under the sink (rather than recessed to the floor). It's also important to note that having a properly-sized GI installed helps protect businesses against grease blockages and sewage backups, which can result in costly plumbing repairs and renovations.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
98	Cost and Canada Emergency Business Account (CEBA) loan	Online stakeholder survey (Feb 17 to March 10, 2023)	As a restaurant owner, the pandemic had a tremendous effect on our business. We were able to get approved for a CEBA loan, which is the only reason we are still open now. Now that operationally things have started to come back to normal, we were making plans to start paying off our loan starting in 2024. Then the inspector told us to install the grease interceptor. We called a plumber and they quoted us the pricing. This will cost us a substantial amount of money. Money that we currently do not have. To be honest, the cost of installing grease interceptors is something that can break our business and it might finally force us to close down. We built our restaurant in 2007, and it was not required for us to install a grease interceptor. We don't deep fry any of our foods in our location. We bake all of our foods. We don't serve any milk products that could go down the drain. Any food scraps are thrown away into the organics bin. All of our sinks have strainers so nothing is flushed down the sink. We have nothing against protecting the environment, but we are just small guys that don't create enough grease to matter. We think a look into each establishment's day-to-day activity is needed to decide whether a grease interceptor is necessary. Rather than demanding all establishments to install them.	Metro Vancouver understands how challenging the last few years have been for the hospitality industry. For that reason, we put the FSGI bylaw review on hold for over two years, to allow food sector establishments to focus on day-to-day business during a difficult time. However, no form of retroactivity or exemptions can be considered, as the bylaw is in place to protect the environment, sewer system, sewer workers, and the public. The requirement that all FSEs have a properly-sized GI installed has been in place since 2012 – that requirement is not new. To support the food service industry, food sector establishments may submit a compliance plan to Metro Vancouver for consideration, allowing them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule. During a previous bylaw review, Metro Vancouver staff considered production-based grease interceptor sizing (e.g. basing GI sizing on how much grease a particular business generates); however, that type of classification posed challenges for monitoring and enforcement as FSEs experience high turnover. Changes to existing businesses may increase or decrease their levels of FOG output.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Grease interceptor maintenance				
99	Maintenance	Online stakeholder survey (Feb 17 to March 10, 2023)	The bylaw requires that grease traps are cleaned every three months. This is too often for a small business and thus the cost is too high.	An FSE can contact MV's Environmental Regulation & Enforcement Division if they would like to propose an alternative maintenance schedule. The FSE would have to provide evidence that all other bylaw requirements are met with an alternative schedule.
Grease interceptor location				
100	Location of grease interceptor	Online stakeholder survey (Feb 17 to March 10, 2023)	The code should be changed to allow GIs to be installed outside if possible.	Neither the current nor proposed bylaws have requirements around location of the grease interceptor – GIs can be installed outside.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Implications of COVID-19				
101	Cost of compliance	Email (February 2023)	Business owners have been through COVID-19, tax increases, food inflation and labour issues. Some have lasted, many have failed. Do not change anything with grease interceptors.	Metro Vancouver understands how challenging the last few years have been for the hospitality industry. For that reason, we put the FSGI bylaw review on hold for over two years, to allow food sector establishments to focus on day-to-day business during a difficult time. The requirement that all FSEs have a properly-sized GI installed has been in place since 2012 – that requirement is not new. To support the food service industry, food sector establishments may submit a compliance plan to Metro Vancouver for consideration, allowing them more time to come into compliance with the bylaw. The plan will need to include details on proposed modifications and an implementation schedule.
Fixtures				
102	Hand sinks	Email (April 2023)	Hand sinks will have a minimal impact on the size/load into a grease interceptor, and should not be required to connect. This will make the plumbing system less costly and easier to install if a separate line to the hand sink is not required.	The bylaw changes would remove the requirement that says that hand sinks must not be connected to grease interceptors. In other words, a business can have a hand sink connected to their grease interceptor – or not. Both situations will be allowed by the proposed bylaw changes.

#	Category	Source	Comment/Question/Issue	Metro Vancouver Response
Composition of grease interceptors				
103	Type of material	Letter (April 2023)	Recommend that Metro Vancouver consider encouraging the use of plastic grease interceptors, versus steel. Steel grease traps are cheaper, but they rust. On plastic grease interceptors, often the gaskets are installed in the lid; on steel grease interceptors, often the gasket comes off easily. On steel grease interceptors, bolts get rusty and then the lid can't be closed tightly, which can cause odours and overflows. All of this can mean that the business owner has to replace their steel grease trap, which will then go to the landfill.	GI material requirements go beyond the jurisdiction of the FSGI bylaw. Factors such as fire safety need to be considered when it comes to construction materials, and other regulations such as the BC Building Code, Plumbing Code and municipal regulations would need to be taken into consideration.
Location of grease interceptors				
104	Location for grease interceptor installation	Letter (April 2023)	The best place to install a grease interceptor is by the sink in the kitchen, with access to hot water for maintenance contractors to remove grease build-up when cleaning the interceptor. In some businesses, the grease trap is installed in the basement of the building or in underground parking. This makes access challenging.	The proposed bylaw change removes the requirement for mop sinks and floor drains to be connected to a GI; this will likely result in fewer GIs installed in the basement of a building or in underground parking.

ATTACHMENT 4

Restaurant kitchen

Food Sector Grease Interceptor Bylaw

PROPOSED BYLAW

Dana Zheng
Program Manager, Liquid Waste Services

Jacqueline Liu-Pope
Senior Project Engineer, Liquid Waste Services

Liquid Waste Committee - September 13, 2023
61473442

metrovancouver

FOG build up

FATS, OILS, AND GREASE

Fats, oils, and grease (FOG) build-up

- Increases maintenance costs, reduces flow capacity
- $2.7 million in annual costs to address

Food Sector Grease Interceptor (FSGI) Bylaw

- Regulates discharge from food sector establishments
- Sets requirements for grease interceptors

FSGI BYLAW REVIEW TIMELINE

Liquid Waste Committee approved bylaw review in 2018

2018	2019	2020 - 2022	2023
Phase 1 & Phase 2		ON HOLD	Phase 3
- Stakeholder identification and project scoping - Engagement and drafting bylaw changes		Bylaw update on hold due to COVID-19	Final engagement and draft bylaw changes to Board

WHAT WE HEARD

Engagement feedback

- Concern about installation and upgrade costs
- Desire for more bylaw flexibility
- Requests for exemptions

Working Group Meeting, 2019

BYLAW UPDATES

- Improve flexibility and bylaw clarity
- Reduce costly plumbing retrofits
- Motivate food sector establishments to follow bylaw, resulting in fewer FOG issues

Restaurant patio in Port Moody

PROPOSED BYLAW CHANGES

1. Expand the definition of food sector establishments
2. Update list of fixtures required to be connected to a grease interceptor
3. More guidance and options for selecting grease interceptors
4. Update re-inspection and sampling fees for cost recovery

Commissary kitchen

Thank you

metrovancouver

7

To: Liquid Waste Committee

From: Colin Meldrum, Director, Engineering, Design & Construction, Liquid Waste Services

Date: August 15, 2023 Meeting Date: September 13, 2023

Subject: **Liquid Waste Services Capital Program Expenditure Update as at June 30, 2023**

RECOMMENDATION

That the Liquid Waste Committee receive for information the report dated August 15, 2023, titled "Liquid Waste Services Capital Program Expenditure Update as at June 30, 2023".

EXECUTIVE SUMMARY

The capital expenditure reporting process as approved by the GVS&DD Board provides for regular status reports on capital expenditures. This is the second report for 2023 which includes the overall capital program for Liquid Waste Services with a multi-year view of capital projects, and the actual capital spending for the 2023 fiscal year to June 30, 2023 in comparison to the annual Capital Cash Flow. As of June 30, 2023, the capital expenditures for Liquid Waste Services are $134.8 million, compared to a prorated annual Capital Cash Flow of $340.9 million. This shortfall is primarily due to invoicing and project delays and the timing of some construction work for the latter portions of the year.

Forecasted expenditures for the current Liquid Waste Services capital program generally remain within the annual Capital Cash Flow planned for 2023.

PURPOSE

To report on the status of the Liquid Waste Services' capital program and financial performance for the 2023 fiscal year to June 30, 2023.

BACKGROUND

The capital expenditure reporting process provides for regular status reports on capital expenditures with interim reports sent to the Water, Liquid Waste and Zero Waste Committees with a final year-end report to the Committees and the Boards in April of each year. Recent changes to the reporting framework now involve four reports per year (one per fiscal quarter) rather than three times per year. This is to align with the Finance Committee reporting schedule.

This report covers GVS&DD capital projects managed by both the Liquid Waste Services and the Project Delivery Departments.

The series of four reports for 2023 look at both the overall capital program for Liquid Waste Services with a multi-year view of capital projects and the actual capital spending for the 2023 fiscal year to date in comparison to the prorated annual Capital Cash Flow.

2023 CAPITAL EXPENDITURES

Capital Program Funding

The capital spending for Liquid Waste Services is funded through the Liquid Waste Operating Budget by a combination of contribution to capital (pay-as-you-go funding) and debt service costs (principal and interest payments) which is generated annually from the regional ratepayers. As a result, the annual impact on the ratepayers is significantly less than the level of budgeted capital expenditures.

Overall Capital Program

The overall capital program for Liquid Waste Services includes capital projects which require multiple years to complete. These projects are broken down into various phases such as project definition, pre-design, detailed design and construction. With the completion of each phase, more information is learned for the appropriate costing of subsequent phases.

It is expected that the capital spending on the Liquid Waste Services capital projects completed in 2023 or ongoing at some point in 2023 will be over the estimated total project cost by approximately $334.0 million, or 1.9% of total estimated cost. These estimated costs are generally being adjusted as part of the 2024 – 2028 Financial Plan and will be further adjusted through the BY2024 capital planning process. For the most part, all of the projects include contingencies in their budgets. Often, these amounts are not fully expended, and will result in projects being completed under budget.

Attachments 1A and 1B provide the details behind the summary information including specific capital projects, summary financial information and notes where required. Attachment 2 provides additional project status information for some of the key projects being completed by the LWS Department. Projects being completed by the Project Delivery Department are excluded from Attachment 2 as they are generally the subject of separate reports.

2023 Capital Program Progress

The Metro Vancouver financial planning process includes Board approval of both an annual Operating Budget (operations, contribution to capital and debt service) and an annual Capital Cash Flow for the planned capital infrastructure projects. The annual Capital Cash Flow comprises the projected spending for a list of capital projects either continuing or to be started within the calendar year.

Table 1 provides a summary of the 2023 actual capital spending to June 30, 2023 compared to the total annual Capital Cash Flow. As of June 30, 2023, capital expenditures for Liquid Waste Services were $134.8 million compared to the annual prorated Capital Cash Flow of $340.9 million. These projects are managed either by the Project Delivery Department or internally by the Liquid Waste Services Department.

Table 1 – June 2023 Capital Spending Summary

Liquid Waste Total	2023 Cash Flow to June 30, 2023	Actual Expenditures to June 30, 2023	% of 2023 Prorated Cash Flow
Collections	$ 101,534,000	$ 50,277,213	50%
Treatment Plants	$ 239,341,000	$ 84,518,501	35%
Total	**$ 340,875,000**	**$ 134,795,714**	**40%**

The underspend is due to four general factors including:

- delays in invoicing for active construction projects, as contractor invoicing is a minimum of 1 month behind progress;
- project delays either in tendering works, initiating construction, or due to design delays; supply chain issues, protracted property negotiations and/or permitting delays; and
- projects which will ramp up construction activities later in the year.

With respect to this last item, Gilbert Road Trunk Sewer South and Central Sections, the South Surrey Interceptor Johnston Road Section, Gleneagles Pump Stations 4 and 5 and the North Road Trunk Sewer have all been awarded construction contracts, but have had limited expenditures in the first six months of the year. Gilbert Road Trunk Sewer Central Section broke ground in May, while Gleneagles Pump Stations and North Road Trunk Sewer were given Notice to Proceed in June. The Annacis Island Wastewater Treatment Plant Influent Surge Control Refurbishment Project started active construction in May. All of these will have greater expenditures in the second half of the year than in the first half. Additional details on these and other significant projects are included in Attachment 1A.

With respect to projects being delivered by the Project Delivery Department, for the most part they are subject to separate standalone reports. The issues on the North Shore Wastewater Treatment Plant Project have resulted in delays to the projected cash flow as have the archaeology issues on the Northwest Langley Wastewater Treatment Plant.

Ongoing Capital Program Impacts from COVID-19 and Current Economic Climate

During these unprecedented times of health and economic uncertainty, all departments have been monitoring the impacts of the pandemic, inflation and supply chains on their operations. This includes capital program expenditures.

Direct impacts due to the pandemic appear to have disappeared. Ongoing supply chain issues continue to affect the schedule of projects as certain components are having longer delivery times than anticipated. Staff are looking at measures to reduce these risks. The inflationary environment is also requiring staff to review project budgets and update estimates, and staff are monitoring impacts on their projects regularly.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Capital expenditures are funded internally (pay as you go) and through debt service costs (interest and principal payments). As capital expenditures are incurred, short term financing is secured and converted twice per year to long term debt through the Municipal Finance Authority.

CONCLUSION

Although the 2023 Liquid Waste Services capital expenditures are less than the planned amounts, the variance is generally a result of cash flow timing, with a number of projects having expenditures deferred to future years. Any surplus resulting from a 2023 underspend will be used to directly fund capital in 2024 and avoid future borrowing.

Attachments

1A. Capital Project Update – Liquid Waste Services
1B. Capital Project Update – Liquid Waste – Project Delivery
2. Liquid Waste Services Capital Project Status Information

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ATTACHMENT 1A

Metro Vancouver
Liquid Waste Services - Capital Project Update
As of June 30, 2023

Project Name	Primary Driver	Project Location	Years	Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment
			2023-2027 Capital Plan 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032				
Collections							
8th Avenue Interceptor Air Treatment Facilities	Upgrade	Vancouver		500,000	14,200,000	3%	Project deferred to address property and siting
Albert Street Trunk Sewer	Growth	Port Moody		10,250,000	10,250,000	98%	substantially complete
Big Bend Forcemain - Gate Replacement	Maintenance	Richmond		200,000	2,700,000	3%	project deferred
Burnaby Lake North Interceptor Cariboo Section	Growth	Burnaby		-	41,000,000	0%	Future project
Burnaby Lake North Interceptor Winston Section	Growth	Burnaby		116,950,000	116,950,000	35%	The project experienced a 4 month delay due to ground conditions, but is progressing.
Burnaby South Slope Interceptor	Growth	Burnaby		500,000	22,700,000	0%	project deferred
Cloverdale Pump Station Capacity Upgrade	Growth	Surrey		3,400,000	103,400,000	1%	Estimates shown is for a new pump station and a
Cloverdale Trunk Sewer Capacity Upgrade	Growth	Surrey		1,200,000	29,000,000	1%	
Combined Sewer Overflow Sampling Station Enhancements	Maintenance	Regional		1,900,000	1,900,000	59%	
Crescent Beach FM - Replacement	Maintenance	Surrey		26,850,000	47,100,000	84%	Project delayed. Budget issues due to unforseen ground conditions and archaeology issues.
Eagle Creek (Lower Section) Channel Restoration	Resilience	Burnaby		-	750,000	0%	no change, future project.
EMQC-Chemistry Laboratory	Upgrade	Delta		250,000	8,650,000	0%	
Lozells Sanitary Trunk Golf Course Section	Growth	Burnaby		-	27,650,000	0%	future project
Manitoba Street Combined Trunk Sewer Separation	Upgrade	Vancouver		-	93,750,000	0%	Future project
Production Way Operation Center Design and Construction	Upgrade	Burnaby		31,000,000	40,400,000	1%	
Fraser Sewerage Area Integrated Resource Recovery (IRR) Study	Opportunity	Regional		1,200,000	1,200,000	14%	
Front Street Pressure Sewer Access Hatches Reinforcement	Maintenance	New Westminster		5,000,000	5,000,000	40%	construction being deferred to 2024 due to third party (MOTI) activities
FSA Flow Metering Program	Maintenance	Regional		2,500,000	3,500,000	54%	
FSA River Crossing Scour Protection Program - Phase 1	Maintenance	Regional		4,200,000	6,400,000	50%	
FSA Sewer Relocations and Protections	Maintenance	Regional		11,700,000	11,700,000	0%	multiple projects inc. Patullo Bridge, CPR, Fraser Surrey Docks. Timing and amount of some project costs dependent on third parties
FSA Statutory Right of Way Acquisitions Phase 1	Maintenance	Delta/Port Moody		35,100,000	35,100,000	31%	ongoing program, funds used as required for OSRW purchases.
Gilbert/Brighouse Trunk Pressure Sewer	Maintenance	Richmond		169,650,000	198,400,000	50%	
Glen Eagles Forcemain Replacement	Maintenance	WestVancouver		15,850,000	15,850,000	35%	Phase 1 completed several years ago. Phase 2 work is designed but awaiting a permit from CN Rail.
Gleneagles Pump Stations Improvements	Maintenance	WestVancouver		33,300,000	40,850,000	8%	Construction beginning on two of five sites in July 2023.
Glenbrook Combined Trunk Kingsway Sanitary Section	Growth	Burnaby		7,200,000	8,100,000	11%	Construction deferred to 2024 to address City of Burnaby concerns.
Glenbrook CSO Gate Replacement	Maintenance	New Westminster		5,150,000	5,150,000	50%	Construction tendered, but may be delayed to 2024 due to supply chain issues
Harbour Pump Station Discharge Header Repair and Valve Replacements	Maintenance	Vancouver		2,500,000	4,850,000	40%	
Harbour Pump Station Power Distribution Equipment Replacement	Maintenance	Vancouver		1,600,000	3,650,000	14%	
Hastings-Cassiar Intake Connection	Growth	Vancouver		5,350,000	5,350,000	98%	Project substantially complete
Highbury Interceptor Diversion Junction Chamber Wall Rehabilitation	Maintenance	Vancouver		500,000	6,000,000	0%	
Highbury Interceptor North Arm Crossing - Upgrade of Siphons	Resilience	Vancouver		12,500,000	12,500,000	99%	Project substantially complete

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Definition | Preliminary Design | Detailed Design | Construction

Project Name	Primary Driver	Project Location	Years (2023-2027 Capital Plan: 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032)	Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment
Jervis Pump Station 25kV Voltage Conversion	Maintenance	Vancouver		1,300,000	1,300,000	19%	Project delayed due to supply chain issues
Kent Pump Station High Voltage Switchgear Replacement	Maintenance	Vancouver		1,150,000	3,000,000	11%	
Surrey Central Valley Capacity Upgrade	Growth	Surrey		-	60,800,000	0%	future project
Production Way Facility Access and Parking Improvements	Maintenance	Burnaby		4,850,000	4,850,000	5%	
LSA Flow Metering Program	Maintenance	Richmond		300,000	300,000	25%	
Marshend Pump Station	Growth	Burnaby		10,500,000	21,150,000	9%	Project delayed to properly define scope.
New CSO Management Gates for New Westminster Interceptor	Upgrade	New Westminster		3,250,000	400,000	11%	Project will be cancelled as costs outweigh benefits
New West Interceptor - Annacis Section 2	Maintenance	Delta		42,000,000	42,000,000	17%	
New West Interceptor Grit Chamber	Maintenance	New Westminster		1,250,000	9,300,000	2%	
New Westminster Interceptor Repair Columbia St. Section	Maintenance	New Westminster		39,550,000	39,850,000	70%	Main contract is substantially complete. Additional work to be undertaken after Pattulo Bridge completion.
New Westminster Interceptor West Branch and Columbia Extension Rehabilitation	Maintenance	New Westminster		2,900,000	37,900,000	5%	
North Road Trunk Sewer	Growth	Coquitlam		11,700,000	13,600,000	59%	majority of Phase 1 done. Remainder delayed due to dispute with BNSF
North Road Trunk Sewer Phase 2	Growth	Coquitlam		8,450,000	10,000,000	14%	Phase 2 contract awarded, with construction to start in summer 2023
North Surrey Interceptor - Port Mann Section - Odour Control	Upgrade	Surrey		5,050,000	29,600,000	1%	Conceptual design nearing completion
North Surrey Interceptor Annieville Channel Crossing Scour Protection	Maintenance	Regional		4,350,000	4,350,000	49%	
North Surrey Interceptor Improvements	Maintenance	Surrey		3,000,000	6,000,000	0%	
North Surrey Interceptor Roebuck Section Replacement	Maintenance	Surrey		1,600,000	19,450,000	1%	
NSA Flow Metering Program	Maintenance	West Vancouver		500,000	900,000	36%	
NSA Scour Protection Upgrades	Maintenance	Regional		2,250,000	2,250,000	5%	construction rescheduled to 2024 to address concerns from local First Nations
NSI 104th Ave Extension	Growth	Surrey		12,950,000	12,950,000	38%	project on hold to address scoping
NSI Flow Management	Upgrade	Surrey		11,500,000	94,500,000	10%	
NSI Rehab or Replacement	Maintenance	Surrey		16,450,000	50,400,000	14%	
Ocean Park Trunk Manholes Lining	Maintenance	Surrey		-	1,050,000	0%	future project
Ocean Park Trunk Sewer - Air Management Facility	Upgrade	Surrey		2,750,000	7,750,000	21%	Property acquired. Preliminary engineering starting.
Port Coquitlam Pump Station Refurbishment	Maintenance	Port Coquitlam		5,950,000	75,600,000	1%	Feasibility Study completed, Preliminary Design not
Port Moody Pump Station Capacity Upgrade	Growth	Port Moody		2,300,000	23,850,000	3%	A conceptual design phase to investigate upgrade options is being completed. Current estimate is for upgrading the existing station.
Port Moody South Interceptor Capacity Upgrade	Growth	Port Moody		-	3,450,000	0%	future project
Port Moody Storm Drain Rehabilitation	Maintenance	Port Moody		200,000	1,600,000	0%	
Rosemary Heights Pressure Sewer Capacity Upgrade	Growth	Surrey		-	10,750,000	0%	future project
Royal Ave PS Rehabilitation	Maintenance	New Westminster		10,100,000	12,900,000	18%	99% design completed, Construction not yet started.
Sapperton Pump Station	Growth	New Westminster		97,500,000	97,500,000	92%	New Sapperton PS was substantially complete July 2021. Demolition of old Sapperton PS pending completion of other work on site and adjacent projects.
Sapperton Pump Station Emergency Backup Power	Resilience	New Westminster		5,000,000	5,000,000	3%	
Sewer Heat Projects	Opportunity	Regional		21,400,000	71,500,000	0%	
South Surrey Interceptor Johnston Section	Growth	Surrey		84,050,000	84,050,000	65%	
South Surrey Interceptor Rehabilitation	Maintenance	Delta		1,800,000	65,500,000	0%	
SSI - King George Section - Odor Control Facility (OCF) and Grit Chamber	Growth	Surrey		19,550,000	19,550,000	98%	Project substantially complete
SSI Influent Control Chamber Repair and Replace Gates	Maintenance	Delta		150,000	1,300,000	1%	project deferred to focus on higher priority work
SSI Sulfide Odour and Corrosion Control	Upgrade	Delta		9,550,000	9,700,000	23%	equipment procured.

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			2023-2027 Capital Plan 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032				
Stoney Creek Sanitary Trunk	Growth	Burnaby		3,700,000	67,700,000	5%	
Surrey Corrosion Control Facility Replacement	Maintenance	Surrey		7,300,000	7,400,000	15%	
VSA Emergency Backup Power	Resilience	Vancouver		24,300,000	29,250,000	57%	5 out of the 9 genset projects are complete. (This includes the 2 temporary gensets for Chilco and Jervis)
VSA Flow Metering Program	Maintenance	Regional		1,900,000	5,800,000	15%	
VSA Grit Chamber Access Improvements	Maintenance	UEL - UEL		2,000,000	2,700,000	0%	
VSA Sewer Relocations and Protections	Maintenance	Regional		32,050,000	32,050,000	42%	multiple projects inc. Broadway Skytrain, VFPA, CPR, Senakw. majority of expenditure expected in 2023-24, but dependent on timing of third parties.
Westridge FM Replacement	Maintenance	Burnaby		7,600,000	8,550,000	27%	project delayed due to archaeological concerns and coordination with municipal works
Westridge Pump Stations 1 & 2 Refurbishment	Maintenance	Burnaby		2,800,000	19,750,000	9%	
White Rock Forcemain Rehabilitation	Maintenance	White Rock/Surrey		1,200,000	14,800,000	10%	
Works Yard	Maintenance	Burnaby		32,000,000	32,000,000	83%	land purchased
Total Collections				**1,066,300,000**	**2,099,900,000**		
Treatment Plants							
AIWWTP Ammonia Removal – Sidestream	Upgrade	Delta		1,000,000	127,250,000	1%	project being accelerated, but still in scoping stages
AIWWTP Chemical Lab UPS System Replacement	Maintenance	Delta		600,000	900,000	12%	
AIWWTP Cogen Building Refurbishment	Maintenance	Delta		1,500,000	1,500,000	97%	
AIWWTP Cogeneration Backup Power	Resilience	Delta		80,500,000	80,500,000	97%	contract substantially complete.
AIWWTP Electrical Distribution System Protection Control and Monitoring	Upgrade	Delta		2,650,000	2,650,000	54%	
AIWWTP Hydrothermal Processing Pilot	Opportunity	Delta		28,650,000	39,350,000	10%	
AIWWTP ICS Replacement Program	Maintenance	Delta		14,350,000	14,350,000	1%	3 areas of plant are being tendered for design
AIWWTP Influent System Remediation	Maintenance	Delta		2,400,000	82,600,000	1%	project being rescoped to address adjacent works
AIWWTP IPS Gates Replacements	Maintenance	Delta		700,000	700,000	75%	1 gate remaining. Remaining gates built under hydraulic gate replacement project
AIWWTP IPS Pump Building Roof Replacement Phase 2	Maintenance	Delta		-	800,000	0%	
AIWWTP Lubrication Storage Facility Conversion	Maintenance	Delta		500,000	500,000	0%	
AIWWTP O&M Building Refurbishment	Maintenance	Delta		-	9,600,000	0%	Deferred to start in 2024
AIWWTP Outfall Repair	Maintenance	Delta		1,550,000	1,550,000	0%	Contingency in case repair is required until new outfall and bypass pipe are complete
AIWWTP Replacement of ICS Equipment	Maintenance	Delta		4,450,000	4,450,000	97%	A few minor projects are progressing
AIWWTP Replacement of Protective Relays	Maintenance	Delta		3,350,000	3,050,000	71%	
AIWWTP Scheduled 64kV Potential & Current Transformer Replacements	Maintenance	Delta		800,000	400,000	30%	
AIWWTP Scum Pump Replacement	Maintenance	Delta		-	1,350,000	0%	future project
AIWWTP Secondary Clarifier Corrosion Repair	Maintenance	Delta		57,800,000	51,850,000	99%	substantially complete
AIWWTP Secondary Effluent Discharge Flowmeter Replacement	Maintenance	Delta		400,000	400,000	99%	substantially complete
AIWWTP Sludge Control Building Electrical Room HVAC upgrade	Maintenance	Delta		850,000	850,000	0%	
AIWWTP Spare Trickling Filter Pump & Motor Purchase	Maintenance	Delta		1,950,000	1,950,000	88%	Expected to finish this year.
AIWWTP Station Battery Replacement	Maintenance	Delta		1,250,000	1,250,000	99%	substantially complete
AIWWTP Trickling Filter Media & Distributor Arms & Ducting Replacement	Maintenance	Delta		90,700,000	90,700,000	70%	3 of 4 units refurbished, last unit deferred to 2024, with some additional duct work in 2025.
AIWWTP UPS Condition Monitoring System	Resilience	Delta		-	550,000	0%	future project
All WWTPs Power Quality Monitoring & Outage Alarming Network	Upgrade	Regional		3,000,000	3,000,000	95%	substantially complete

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Project Name	Primary Driver	Project Location	Years	Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment
			2023-2027 Capital Plan 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032				
Annacis Influent System Surge Control Refurbishment	Growth	Delta		22,000,000	22,000,000	45%	
Annacis MCC 80 051, 80 070, 80 071 Replacement	Maintenance	Delta		2,850,000	2,850,000	95%	
Ferguson Road Paving Refurbishment	Upgrade	Richmond		2,100,000	1,000,000	98%	substantially complete
IIWWTP - Biogas Lines Relocation	Resilience	Richmond		5,750,000	4,800,000	95%	substantially complete
IIWWTP Biosolids Dewatering Facility	Upgrade	Richmond		61,300,000	61,300,000	97%	substantially complete, but warranty issues are delaying final commissioning.
IIWWTP CEPT Polymer Line Replacement	Maintenance	Vancouver		300,000	2,300,000	1%	work to be tendered this year
IIWWTP CEPT Winterization	Maintenance	Vancouver		1,500,000	1,500,000	0%	work to be tendered this year
IIWWTP ICS IPS Control Replacement	Maintenance	Richmond		1,750,000	1,750,000	30%	Design being reviewed. Construction to start this
IIWWTP ICS Migration Program	Maintenance	Vancouver		-	12,000,000	0%	future project
IIWWTP ICS Replacement Program	Maintenance	Richmond		750,000	750,000	1%	some smaller system designs started
IIWWTP Influent Gate Refurbishment	Maintenance	Richmond		1,350,000	1,350,000	41%	
IIWWTP IPS Drive Remediation	Maintenance	Richmond		1,400,000	2,300,000	7%	
IIWWTP MCC/Power Distribution Assess/Replace - Phase 2	Maintenance	Richmond		1,000,000	1,000,000	60%	
IIWWTP Non-Domestic Trucked Liquid Waste Alternative	Maintenance	Regional		800,000	800,000	0%	Project deferred to work on higher priority items
IIWWTP PA Tanks Improvement	Maintenance	Richmond		6,500,000	6,500,000	0%	project delayed due to staffing issues
IIWWTP PA-Sed Tank & Gallery Wall Refurbishment	Maintenance	Richmond		200,000	950,000	0%	project delayed due to staffing issues
IIWWTP Replacement of CoGen Control System	Maintenance	Richmond		2,500,000	2,500,000	70%	
IIWWTP Siphon Chamber Refurbishment	Maintenance	Richmond		200,000	2,150,000	0%	project delayed due to staffing issues
IIWWTP Surge Mitigation	Maintenance	Vancouver		250,000	2,000,000	0%	scoping underway
IIWWTP Solids Handling Refurbishment	Maintenance	Richmond		64,850,000	64,850,000	98%	substantially complete
IIWWTP Standby Diesel Generators	Resilience	Richmond		2,000,000	5,000,000	1%	on hold for scoping
Iona Island Control & Instrumentation Replacement 2011	Maintenance	Richmond		2,750,000	2,750,000	77%	ICS logic tests planned for summer
LIWWTP Admin Dewatering Building Roof Repair	Maintenance	Richmond		100,000	800,000	0%	past repairs have been successful. Defer to 2024
LIWWTP Biogas Clean-up Project	Opportunity	Richmond		13,800,000	13,800,000	99%	substantially complete
LIWWTP CCT Isolation Gates	Maintenance	Richmond		2,050,000	2,050,000	98%	substantially complete
LIWWTP Effluent Heat Recovery Project	Opportunity	Richmond		10,000,000	10,000,000	2%	preliminary design complete
LIWWTP Gravity Thickener Redundancy	Maintenance	Richmond		500,000	21,400,000	0%	delayed due to staffing
LIWWTP Ground Fault Detection System Replacement	Maintenance	Richmond		1,550,000	1,550,000	2%	
LIWWTP High Efficiency Boiler	Maintenance	Richmond		1,300,000	1,300,000	17%	
LIWWTP ICS Electrical Distribution System Migration Program	Maintenance	Richmond		-	7,000,000	0%	future project
LIWWTP ICS Replacement Program	Maintenance	Richmond		6,750,000	6,750,000	39%	Design being reviewed
LIWWTP PA-Sed Tank Refurbishment	Maintenance	Richmond		4,150,000	4,150,000	10%	design complete
LIWWTP Pilot Digestion Optimization Facility	Opportunity	Richmond		4,850,000	5,200,000	90%	facility in commissioning phase
LIWWTP Power Reliability	Resilience	Richmond		12,400,000	12,400,000	26%	equipment procured. Installation contract for voltage regulators awarded. Generator contract to be let later this year.
LIWWTP SCL Refurbishment	Maintenance	Richmond		850,000	34,000,000	0%	delayed due to staffing
LIWWTP Trickling Filter Refurbishment	Maintenance	Richmond		500,000	54,450,000	0%	delayed due to staffing
NLWWTP Screw Pump Replacement	Maintenance	Langley Township		1,550,000	1,550,000	84%	substantially complete
NLWWTP Standby Diesel Generator	Resilience	Langley Township		1,000,000	1,000,000	0%	project in scoping
NLWWTP 25 kV Substation Replacement	Maintenance	Langley Township		10,100,000	10,100,000	94%	substantially complete
WWTPs Electrical System Studies & Upgrades	Resilience	Regional		750,000	1,900,000	22%	
Total Treatment Plants				**553,250,000**	**913,850,000**		
Grand Total Liquid Waste Services				**1,619,550,000**	**3,013,750,000**		

ATTACHMENT 1B

Metro Vancouver
Liquid Waste - Project Delivery - Capital Project Update
As of June 30, 2023

Project Name	Primary Driver	Project Location	Years	Approved Capital Budget	Current Estimated Total Project Cost	% Complete	Comment
			2023-2027 Capital Plan 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032				
Treatment Plants							
AIWWTP Digester No. 5	Growth	Delta		6,900,000	455,700,000	0%	Delayed due to staff availability.
AIWWTP Stage 5 Expansion	Growth	Delta		944,100,000	1,004,350,000	54%	Detailed design of Phase 2 Remaining Works delayed. Completion of construction anticipted in 2030.
Annacis Outfall System	Growth	Delta		356,050,000	356,050,000	85%	Outfall construction is approximately 85% complete.
Biosolids Dryer	Opportunity	Delta		22,700,000	448,150,000	4%	Feasibility study being updated. Overall project start delayed due to staff availability.
IIWWTP Outfall Refurbishment	Maintenance	Vancouver		20,000,000	325,000,000	1%	
Iona Secondary Wastewater Treatment - Phase 1	Upgrade	Richmond		1,060,000,000	9,944,800,000	2%	Baseline budget and schedule has been established as part of final Project Definition Report and Stage Gate 1 approval in March 2022. Schedule is 5-years beyond regulatory deadline.
North Shore WWTP Secondary Upgrade, Conveyance and Decommissioning	Upgrade	Dist of North Van		1,057,900,000	1,057,900,000	55%	Construction of treatment plant 37% complete. Design Build Finance contract terminated. New Designer and Contractor engaged for detailed design and construction execution planning. Update expected Q3 2023.
Northwest Langley Wastewater Treatment Program	Growth	Langley Township		2,280,650,000	2,280,650,000	15%	The Northwest Langley WWTP Expansion Project successfully passed the detailed design stage gate on June 2, 2023. The new Pump Station, SSO tank and River Crossing projects are all expected to be completed in 2023 as scheduled.
Total Treatment Plants				**5,748,300,000**	**15,872,600,000**		
Grand Total Liquid Waste - Project Delivery				**5,748,300,000**	**15,872,600,000**		

ATTACHMENT 2

Capital Project Status Information
June 30, 2023

GREATER VANCOUVER SEWERAGE & DRAINAGE DISTRICT (Liquid Waste Services)

The majority of projects under the GVS&DD Capital Program are delivered by the Liquid Waste Services Department. The following narrative provides details and status updates on the more significant of these projects. Seven projects (as identified in Attachment 1B), are being delivered by the Project Delivery Department. As those projects provide separate updates to the Liquid Waste Committee and GVS&DD Board, no additional information on them is provided here.

Infrastructure Growth Program

- **FSA – Burnaby Lake North Interceptor – Winston Street Section** – Phase 1 of the work was completed in 2021. In 2022, GVS&DD awarded Pomerleau Bessac Infrastructure (PBI) a contract for Phase 2 of the project, which involves 2.9 km of 2134 mm diameter plastic-lined concrete pipe, to be installed by tunneling. The tunneled section follows Winston Street, starting 140m south of Greenwood Street, extending east up to approximately 500m west of the junction with Brighton Avenue. Construction began in May 2022. Currently, there is a schedule delay of about 4 months due to tunneling issues. Projected completion date is Q4 2024. To date, 4 of 5 shafts have been completed, and 750 m of sewer has been installed.

- **FSA - Annacis Island WWTP Outfall – Surge Control -** This project involves the replacement of four hydraulic gates as well as ancillary equipment in the east and west channel inside the Influent Control Chamber. The work will mitigate the risk of transient surges (water hammer) to upstream infrastructure. The GVS&DD awarded the construction contract to Maple Reinders Construction Limited in March 2021. The project is delayed by one year to allow safe access during the low flow summer period. Long lead equipment has since been delivered, and construction for east channel hydraulic gate replacements is well underway, which had started on May 29, 2023. Overall construction is approximately 64% complete. Work in the west channel that was expected to be completed in the summer of 2023, has been moved to Summer 2024. Substantial completion is expected to be in late-Q3 2024.

- **FSA - North Road Trunk Sewer No. 2 –** Construction of Phase 1A covering the sections between Brunette River and Lougheed Highway was completed in 2020. Construction of Phase 1B involving a railway crossing is pending for resolution of property issue with Burlington Northern Santa Fe Railway. The Phase 2 construction contract, involving replacement of the existing 250mm/300mm diameter sewer with 1.3 km of new 450mm and 600mm diameter sewer between Lougheed Highway and Clarke Road, was executed in late May 2023. Construction is scheduled to commence in August of 2023, and construction completion is expected in 2025.

Infrastructure Maintenance Program

- **LSA – Gilbert Trunk Sewer Twinning** – The Gilbert Trunk Sewer No 2 project was divided into four phases, and the construction of Phase 1 and 2 is complete. The remaining 2 Phases have a total length of 4.7 km consisting of 1.8 m diameter sewers. The construction of Phase 3, between Blundell Road and Steveston Highway, was awarded to BD Hall on October 28, 2022. Phase 3 started construction in Spring 2023. Approximately 55m of sheet pile shoring has been installed to date, and pipe installation is expected to commence towards the end of July. The construction of Phase 4, from Steveston Highway to the Lulu Island WWTP, was awarded to Jacob Brothers on July 29, 2022. Phase 4 started construction in Spring 2023. Construction of a second access bridge to the treatment plant is complete. Approximately 260m of pipe has been installed to date, and construction of the junction chamber at the treatment plant is approximately 20% complete. Both phases are expected to be complete in fall 2025.

- **NSSA – Gleneagles Pump Station Improvements –** This project involves upgrading or replacing five existing wastewater pump stations located in West Vancouver in order to replace aging equipment, expand system capacity, and meet seismic standards. A $14M contract was awarded to Industra Construction in December 2022 for major upgrades to both Gleneagles 4 and 5. The Notice to Proceed was issued to Industra Construction in June 2023. Construction began at Gleneagles 5 in July 2023 with completion scheduled for 2024, followed by construction at Gleneagles 4 in 2024-2025. Gleneagles 3 began the conceptual design phase in December 2022, which is expected to conclude in 2023. Gleneagles 1 and 2 are in the preliminary design phase and staff are working closely with the District of West Vancouver in order to optimize design and construction. Preliminary design for Gleneagles 1 and 2 is scheduled to be complete in 2024.

- **FSA – River Scour Protection Program – Scour Protection at Maple Ridge Forcemain, Fraser River Crossing -** The Maple Ridge Forcemain under the Fraser River was constructed in 1981 and consists of twin 762 mm diameter steel pipe. The crossing is about 400 m downstream of Barnston Island where the river is about 600 m wide. The river channel has recently experienced scour, which posed a risk to the forcemain. This project involves adding additional rip rap to the existing scour protection apron. The work was tendered in Q4 2022 and JJM Construction began construction on January 3, 2023 and was substantially completed on February 8, 2023. Additional scour protection projects will be completed in 2023 and 2024 at other crossings.

- **FSA – River Scour Protection Program – Scour Protection at North Surrey Interceptor / Annacis Main No. 3, Fraser River Crossing** – North Surrey Interceptor / Annacis Water Main No. 3, Fraser River Crossing was constructed in 1973 and consists of three stacked lines: 1-1200mm steel pipe (NSI); 1-660mm steel sewer pipe (NSI) and 1-1200mm steel water pipe (AN3). The AN3/NSI passes under the South Arm approximately 900m downstream of the trifurcation point. The work includes the supply and installation of a scour protection apron. The west portion of the apron blends into the existing 1995 blended rock apron and extends the scour protection further upstream and downstream of the pipeline alignment. The east portion of the apron extends 25m upstream and downstream of the pipeline alignment. Both portions are 1m thick. The contract was awarded in December 2022. Construction began on January 31, 2023 and was substantially completed on February 28, 2023.

- **FSA - Crescent Beach FM Replacement** – This project involves the design and construction of approximately 2 km of 1.2 m diameter sanitary force main to replace the existing 500 mm

diameter FRP (fiber reinforced plastic) pipe which is aging and in poor condition. The GVS&DD awarded the construction contract to JJM Construction in July 2021. Construction started in the fall of 2021, and unforeseen ground conditions and property challenges have delayed the project. The project is now planned to be complete by the end of 2023. As of the end of June 2023, 1060 m of pipe has been installed, including the trenchless crossings of Highway 99 and the BCR railway

- **FSA - New Westminster Interceptor Repair – Columbia Street Section** – This project involves the rehabilitation of 1.6 km of the 1.5 m diameter New Westminster Interceptor from Front St. to McBride Blvd in New Westminster. Oscar Renda Contracting of Canada was awarded the construction contract starting July 2021. The contract achieved completion at the end of April. Some portions of the work have been removed from ORCC's contract due to schedule and access issues with the Patullo Bridge Replacement Project, and will be completed at future date.

- **FSA – Annacis Island WWTP Trickling Filter Media, Distributor and FOA Duct Replacement –** This project involves replacing the rotary distributors, plastic media and foul air ducting for the four Trickling Filters (TF) at the AIWWTP. These components have been in service for over 20 years and are reaching the end of their service life. The distributors and ducting have experienced significant corrosion, resulting in equipment failures that required emergency maintenance. Construction is being completed under two contracts. The first contract was awarded to Maple Reinders Construction Ltd., in 2019 for the rehabilitation of TF 1 and 3, and has been completed. The work for TF 2 and TF 4 was awarded to Pomerleau in 2021. A significant portion of Pomerleau's contract work has been completed to date. However, due to foreseen mechanical issues with the TFs (unrelated to this contract), the remaining work in TF 4 and TF 2 will be completed in 2024 and 2025, respectively.

Infrastructure Resilience Program

- **VSA – Emergency Backup Power** - This project involves design, supply and installation of standby emergency backup generators at the Chilco, Columbia, Harbour, Hudson, Jervis, Kent and Willingdon pump stations to allow the stations to remain operational during power failure events and reduce the risk of a spill. Backup generators for Harbour, Hudson, Kent, Willingdon and Columbia pump stations have all been completed and commissioned in 2021. The two remaining pump stations are Chilco and Jervis, which will have temporary generators installed by end of 2023 or early 2024. The Notice to Proceed for the Jervis temporary generator has been issued in Q2 of 2023, and construction is scheduled to commence in September 2023. The Chilco temporary generator contract will be issued in Q3 of 2023. The detail design, RFP, permitting and property requirements for the Jervis PS permanent generator are complete. The tender for the permanent works will be issued in Q3 of 2023. The Chilco PS permanent generator concept is under review by the Vancouver Parks Board, prior to starting the detailed design.

- **Lulu Island Wastewater Treatment Plant Power Reliability** - The project involves the design, supply and installation of a backup diesel generator and two voltage sag fighters. The backup diesel generator in a dedicated generator building will provide 2.75 MW power to minimize downtime and maintain the critical operations during longer term power outages. The design for diesel generator and its building will be completed by Q1 of 2024, with pre-purchase equipment being awarded by Q4 of 2023. Construction is scheduled to start in 2024 and complete by 2025. The supply and installation of voltage sag fighters is upgrading the primary treatment process' main power distribution system, in order to maintain a

continuous process operation for effluent regulatory compliance during utility voltage sagging. The equipment was purchased and received, and the Notice to Proceed was issued in June, 2023. Construction substantial completion is scheduled for Q3 of 2024.

Infrastructure Upgrade Program

- **VSA – Iona Island WWTP Biosolids Dewatering Facility** – This project involves the construction of a biosolids dewatering facility. This facility will significantly increase the dryness of biosolids produced the Iona Island WWTP. MV incurs significant cost to haul biosolids to reuse and disposal sites. By increasing biosolids dryness, the weight and volume of the hauled material will be reduced, resulting in cost, fuel and greenhouse gas emission reductions. This facility will allow the decommissioning of the four existing digested sludge lagoons and the sludge drying area, which in turn will provide space for construction of new tertiary treatment facilities at Iona Island WWTP. The $52 million design-build contract for the project was awarded to NAC Constructors in April, 2019. The design phase was completed in 2020 and construction was completed in December, 2022. The contractor is currently addressing an equipment deficiency discovered during commissioning. The dewatering facility is expected to be handed over for owner-commissioning by MV Staff in Q3 of 2023.

Opportunity Program

- **FSA – Annacis Island WWTP Hydrothermal Liquefaction** – This project involves the design and construction of a demonstration-scale plant to convert wastewater biosolids to bio-crude oil, which can be used as a low carbon fuel. The demonstration scale plant will be used to assess technology performance and feasibility of full-scale implementation of the hydrothermal liquefaction technology at WWTPs. The HTL system design is anticipated to be completed in Q3 of 2023. The entire HTL demonstration plant is scheduled to be constructed in 2025 and gradually put in operation from 2025 to 2027.

- **LSA – LIWWTP Pilot Digestion Optimization Facility (PDOF)** - The PDOF was designed to enable evaluation of optimization techniques for the existing anaerobic digestion process, as well as the development of emerging anaerobic digestion processes. The facility would allow testing of these processes without risking full-scale operations. Lessons learned at the pilot scale would be incorporated in MV facilities, potentially resulting in improved efficiency of the existing digesters, will postpone the need for digester system expansion. The PDOF is designed to be adaptable and transportable (being built in modules) to other MV facilities (such as AIWWTP or ARC) for further research and testing purposes. Staff from O&M and PPA, in cooperation with UBC Okanagan research staff, will be conduct experimentation following the commissioning of the facility.

  The GVS&DD awarded the PDOF fabrication and installation contract to Tritech in Q1 2021. Fabrication and installation reach substantial complete in March of 2023, and the owner's commissioning was completed in June of 2023. The system is expected to be commissioned and turned over to Lulu Operations & Maintenance by end of July of 2023.

To: Liquid Waste Committee

From: Maari Hirvi Mayne, Program Manager Liquid Waste Regulation, Environmental Regulation and Enforcement, Parks & Environment

Date: August 16, 2023 Meeting Date: September 13, 2023

Subject: **Appointment of Enforcement Officers**

RECOMMENDATION

That the GVS&DD Board:

a) pursuant to the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw* 299, 2007 and the *Environmental Management Act*:
   i. rescind the appointment of Metro Vancouver employee Ana Nic Lochlainn as an officer;
   ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, Amanda Craft, and Mike Mijares as officers; and
   iii. rescind the appointment of former City of Vancouver employee Nicole Montgomery as a deputy sewage control manager.

b) pursuant to section 28 of the *Offence Act* for the purpose of serving summons for alleged violations under the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw*:
   i. rescind the appointment of Metro Vancouver employee Ana Nic Lochlainn; and
   ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft.

EXECUTIVE SUMMARY

Recent changes in staff at Metro Vancouver and the City of Vancouver have resulted in a need to update staff appointments as Greater Vancouver Sewerage and Drainage District (GVS&DD) Board-designated officers and deputy sewage control manager under the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw 299, 2007* (the Bylaw), the *Environmental Management Act* and the *Offence Act*. Metro Vancouver staffing changes are a result of recent retirements and promotions within Metro Vancouver. Staff recommend that the GVS&DD Board appoint staff and rescind appointments accordingly.

PURPOSE

To appoint and rescind appointments of Metro Vancouver employees as Board-designated officers and to rescind the appointment of a former City of Vancouver employee as a Board-designated deputy sewage control manager.

BACKGROUND

Metro Vancouver's Liquid Waste Regulatory Program supports the goals of the *Integrated Liquid Waste and Resource Management Plan* through regulation of the discharge of wastes to the region's sanitary sewer systems.

Employment status changes for Metro Vancouver and City of Vancouver environmental regulatory staff have resulted in a need to update staff appointments to ensure appropriate authority to advance liquid waste management goals. Three Metro Vancouver retirements and two promotions within Metro Vancouver resulted in five vacancies being filled recently. Section 29 of the *Environmental Management Act* and the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw No. 299, 2007* grant authority to Board-designated deputy sewage control managers and officers.

Metro Vancouver staff are responsible for the administration of the GVS&DD liquid waste management bylaws within the boundaries of the GVS&DD. Within the City of Vancouver, City staff have historically administered these bylaws. This arrangement has been in effect since the Bylaw was first enacted in 1990. A formal agreement between Metro Vancouver and the City of Vancouver was established to ensure that delivery of source control services by the City serves the interests of the GVS&DD and its taxpayers.

ROLE OF MUNICIPAL SEWAGE CONTROL OFFICERS

Officers may enter property, inspect works, and obtain records and other information to promote compliance with the Greater Vancouver Sewerage and Drainage District liquid waste management bylaws.

The *Offence Act* allows regional districts to appoint enforcement officers for the purpose of serving summons for bylaw violations. Officers, if appointed for that purpose, may serve a summons in respect of alleged offences under the GVS&DD liquid waste management bylaws.

ALTERNATIVES

1. That the GVS&DD Board:
   a) pursuant to the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw 299, 2007* and the *Environmental Management Act*:
      i. rescind the appointment of Metro Vancouver employee Ana Nic Lochlainn as an officer;
      ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, Amanda Craft, and Mike Mijares as officers; and
      iii. rescind the appointment of former City of Vancouver employee Nicole Montgomery as a deputy sewage control manager.
   b) pursuant to section 28 of the *Offence Act* for the purpose of serving summons for alleged violations under the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw*:
      i. rescind the appointment of Metro Vancouver employee Ana Nic Lochlainn; and
      ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft.
2. That the GVS&DD Board receive for information the report dated August 16, 2023 titled "Appointment of Enforcement Officers" and provide alternative direction to staff.

FINANCIAL IMPLICATIONS

There are no financial implications as the GVS&DD appointees are already on staff, and there are no costs associated with rescindments.

CONCLUSION

Recent changes in staff have resulted in a need to update staff appointments as GVS&DD Board-designated officers and deputy sewage control manager under the *Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw,* the *Environmental Management Act,* and the *Offence Act*. Staff recommend that the GVS&DD Board adopt Alternative 1.

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To: Liquid Waste Committee

From: Peter Navratil, General Manager, Liquid Waste Services

Date: September 7, 2023 Meeting Date: September 13, 2023

Subject: **Manager's Report**

RECOMMENDATION
That the Liquid Waste Committee receive for information the report dated September 7, 2023 titled "Manager's Report".

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1. Update on Metro Vancouver's DCC Program

As the region continues to face significant challenges associated with population growth, post Covid inflation, climate change events and overall affordability, Metro Vancouver cannot delay the delivery of critical infrastructure required to support development across the region. Regional affordability and financial sustainability are key Board priorities, and therefore the Board Chair activated a Financial Plan Task Force to explore all methods to reduce increases to the average annual rates to rate payers.

Staff approached the capital plan with a lens to moving projects of lower risk and projects that could not be completed due to market and capacity limits out of the 5 year financial plan window. This work accomplished a reduction in the 5 year capital plan of $650M. Second, staff determined required remaining funding for the capital plan and brought forward a recommendation that aligns with the Board direction to have growth pay for growth by accelerating the development cost charge program during the 5 year financial plan window.

In April 2023, the Metro Vancouver Board endorsed moving toward a one-per-cent assist factor for water and liquid waste development cost charges (DCCs), and implementing a new parkland acquisition DCC and moving it to a 1% assist factor within the 2024-2028 Financial Plan, and directed staff to approach the 2024-2028 financial plan with targets of 12% for 2024, 11% for 2025, 5% for 2026, and 5% for 2027.

Metro Vancouver is currently analyzing the impact of DCC rate increases on the housing market, and on overall economic viability and long-range regional affordability, and will be engaging with member jurisdictions, in region First Nations, industry, and the public in the coming weeks. Starting on September 19, 2023, Metro Vancouver will be engaging on the proposed revisions to DCCs, and will be hosting online information sessions for member jurisdictions, industry, and the public. The incremental increases in DCC's in the table below are significant, however are primarily due to significant cost increases in the Metro Vancouver capital program, and need to be phased in over three years to mitigate against ongoing inflation and potential delays in development across the region.

Please see the table below for estimated per unit costs increases to total DCCs across the region. Metro Vancouver looks forward to dialogue on the proposed DCC increases over the coming weeks and anticipates bringing forward increased rates along with the 2024 budget and 2024-2028 Financial Plan in October.

Liquid Waste DCC				
Assist Factor	**Existing 17.5%**	**16%** **Jan 1, 2025**	**10%** **Jan 1, 2026**	**1%** **Jan 1, 2027**
VSA				
Residential Lot Development Unit	$ 3,335	$ 10,498	$ 11,290	$ 12,476
Townhouse Dwelling Unit	$ 2,983	$ 9,593	$ 10,316	$ 11,400
Apartment Dwelling Unit	$ 1,988	$ 6,298	$ 6,772	$ 7,484
Non-Residential (per square foot)	$ 1.63	$ 5.30	$ 5.70	$ 6.30
NSSA				
Residential Lot Development Unit	$ 3,300	$ 9,760	$ 10,478	$ 11,557
Townhouse Dwelling Unit	$ 2,786	$ 8,996	$ 9,658	$ 10,652
Apartment Dwelling Unit	$ 2,030	$ 6,005	$ 6,448	$ 7,111
Non-Residential (per square foot)	$ 1.67	$ 5.00	$ 5.37	$ 5.92
LISA				
Residential Lot Development Unit	$ 3,313	$ 5,683	$ 6,152	$ 6,855
Townhouse Dwelling Unit	$ 2,756	$ 4,927	$ 5,333	$ 5,943
Apartment Dwelling Unit	$ 2,042	$ 3,516	$ 3,806	$ 4,241
Non-Residential (per square foot)	$ 1.54	$ 2.55	$ 2.76	$ 3.08
FSA				
Residential Lot Development Unit	$ 6,254	$ 11,443	$ 12,311	$ 13,613
Townhouse Dwelling Unit	$ 5,390	$ 10,015	$ 10,775	$ 11,914
Apartment Dwelling Unit	$ 4,269	$ 7,302	$ 7,855	$ 8,686
Non-Residential (per square foot)	$ 3.30	$ 5.41	$ 5.82	$ 6.43

2. Draft Liquid Waste 2024 – 2028 Capital Plan: Breakdown by Sewerage Area

At the July 19, 2023 Liquid Waste Committee meeting, staff were requested to report back to provide additional information on the draft Liquid Waste 2024 – 2028 Capital Plan, showing a breakdown by region coverage, including the drivers for the capital plans and the sources of funding.

Capital Expenditures 2024 – 2028

($,000,000s)	Growth	Maintenance	Resilience	Upgrade	Opportunity	Total
FSA	$ 2,234.3	$ 432.5	$ 15.7	$ 164.9	$ 127.7	**$ 2,975.1**
VSA	-	225.1	16.9	1,625.9	-	**1,867.9**
NSSA	-	45.5	-	288.4	-	**333.9**
LIWSA	-	163.1	8.5	-	11.0	**182.6**
Drainage	-	3.1	0.8	-	-	**3.8**
Other	-	-	-	-	$ 62.3	**$ 62.3**
Total	**$ 2,234.3**	**$ 869.3**	**$ 41.8**	**$ 2,079.2**	**$ 201.0**	**$ 5,425.6**

3. 2023 Microfibres Reduction Campaign Update

The 2023 regional "Our Ocean Thanks You" campaign will run from September 11 to October 29. The campaign aims to reduce microfibres in the ocean and supports Metro Vancouver's source control initiatives to reduce unwanted items in our wastewater. Now in its third year, the campaign asks residents to wash laundry in cold water to reduce microfibre shedding. The campaign targets residents age 24 to 44, primarily families with children under 18, asking them to "switch to cold." The campaign will use existing creative materials featuring local marine life, as well as some additional new creative pieces to update the campaign. Campaign tactics are still being finalized, but will likely include social media, digital placements (websites, digital TV), TV, PSA, and radio. All materials will direct residents to the campaign website (Reference 1), where they can learn more about microfibres and additional ways to reduce them.

4. Liquid Waste Committee 2023 Work Plan

The updated 2023 Work Plan (Attachment 1) shows the status of the Committee's key priorities for the year.

ATTACHMENT
1. Liquid Waste Committee 2023 Work Plan

REFERENCE
1. Microfibres Reduction Campaign Webpage: https://metrovancouver.org/microfibres

61243507

ATTACHMENT 1

Liquid Waste Committee 2023 Work Plan
Report Date: September 13, 2023

Priorities	
1st Quarter	**Status**
2023 Liquid Waste Capital Projects	Complete
2022 Wipe It, Green Bin It Campaign Results	Complete
2022 Microfibres Reduction Campaign Results	Complete
North Shore Wastewater Treatment Plant Project Update	Complete
Wet Weather Pricing - Proposed Amendments to GVS&DD Cost Apportionment Bylaw	Complete
2023 Liquid Waste Sustainability Innovation Fund Applications	Complete
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Complete
Utility Policies (as applicable)	Complete
Contract Approvals as per *Procurement and Real Property Contracting Authority Policy*	Complete
2nd Quarter	
Annacis Island Wastewater Treatment Plant Project Update	Complete
Northwest Langley Wastewater Treatment Plant Project Update	Complete
North Shore Wastewater Treatment Plant Project Update	Complete
Liquid Waste Services Capital Expenditure Summary Update as at December 31, 2022	Complete
2023 Update on Liquid Waste Sustainability Innovation Fund Projects	Complete
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	Complete
Utility Policies (as applicable)	Complete
Contract Approvals as per *Procurement and Real Property Contracting Authority Policy*	Complete
3rd Quarter	
GVS&DD Food Sector Grease Interceptor Bylaw Amendment	Complete
Liquid Waste Services Capital Expenditure Summary Update as at April 30, 2023	Complete
GVS&DD Sewer Use Bylaw and Fees Update	In Progress
Reclaimed Water Policy	In Progress
2023 Unflushables Campaign Results	In Progress
2022 GVS&DD Environmental Management and Quality Control Annual Report	In Progress
Liquid Waste Services Capital Expenditure Summary Update as at June 30, 2023	In Progress
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	In Progress
Utility Policies (as applicable)	In Progress
Contract Approvals as per *Procurement and Real Property Contracting Authority Policy*	In Progress
4th Quarter	
2024 Annual Budget & 5 Year Financial Plan - Liquid Waste	In Progress
Environmental Management System Update	In Progress
LWMP Review and Update, Report on Phase 2	In Progress
Lower Mainland Estuary Management Program	In Progress
Liquid Waste Services Capital Expenditure Summary Update as at August 31, 2023	In Progress
Drainage Areas Policy	In Progress
Sewage Catchment Area (Rawn) Amendment - Langley Servicing Plan	In Progress
Municipal Requests for Sewerage Area Boundary Amendments (as applicable)	In Progress
Utility Policies (as applicable)	In Progress
Contract Approvals as per *Procurement and Real Property Contracting Authority Policy*	In Progress