

**METRO VANCOUVER REGIONAL DISTRICT
ZERO WASTE COMMITTEE**

MEETING

Thursday, September 14, 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 A¹

1. ADOPTION OF THE AGENDA

1.1 September 14, 2023 Meeting Agenda

That the Zero Waste Committee adopt the agenda for its meeting scheduled for September 14, 2023 as circulated.

2. ADOPTION OF THE MINUTES

2.1 July 13, 2023 Meeting Minutes

That the Zero Waste Committee adopt the minutes of its meeting held July 13, 2023 as circulated.

3. DELEGATIONS

4. INVITED PRESENTATIONS

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Summary of Municipal Waste Collection Service Models

That the Zero Waste Committee receive for information the report dated August 31, 2023, titled "Summary of Municipal Waste Collection Service Models".

5.2 Waste-to-Energy Facility Environmental Monitoring and Reporting 2022 Update

That the Zero Waste Committee receive for information the report dated September 7, 2023, titled "Waste-to-Energy Facility Environmental Monitoring and Reporting 2022 Update.".

¹ Note: Recommendation is shown under each item, where applicable.
September 7, 2023

5.3 Solid Waste Services Capital Program Expenditure Update as of June 30, 2023

That the Zero Waste Committee receive for information the report dated September 5, 2023, titled “Solid Waste Services Capital Program Expenditure Update as of June 30, 2023”.

5.4 Appointment of Enforcement Officers

That the GVS&DD Board:

- a) pursuant to the *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996* and the *Environmental Management Act*:
 - i. rescind the appointment of Ana Nic Lochlainn as an officer; and
 - ii. appoint Metro Vancouver employees, Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft as officers.
- 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 Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*:
 - i. rescind the appointment of Ana Nic Lochlainn; and
 - ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft.

5.5 Manager’s Report

That the Zero Waste Committee receive 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.

10. ADJOURNMENT/CONCLUSION

That Zero Waste Committee adjourn/conclude its meeting of September 14, 2023.

Membership:

Kirby-Yung, Sarah (C) – Vancouver
Hodge, Craig (VC) – Coquitlam
Calendino, Pietro – Burnaby
Darling, Steve – Port Coquitlam

Ferguson, Steve – Langley Township
Fry, Pete – Vancouver
Kruger, Dylan – Delta

Muri, Lisa – North Vancouver District
Wallace, Rosemary – Langley City
Weverink, Paul – Anmore

**METRO VANCOUVER REGIONAL DISTRICT
ZERO WASTE COMMITTEE**

Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Zero Waste Committee held at 1:01 pm on Thursday, July 13, 2023 in the 28th Floor Boardroom Room, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:

Chair, Councillor Sarah Kirby-Yung, Vancouver
 Vice Chair, Craig Hodge, Coquitlam (arrived at 1:08 pm)
 Councillor Pietro Calendino, Burnaby
 Councillor Steve Darling, Port Coquitlam
 Councillor Dylan Kruger, Delta
 Councillor Lisa Muri, North Vancouver District
 Councillor Rosemary Wallace, Langley
 Councillor Paul Weverink, Anmore

MEMBERS ABSENT:

Councillor Steve Ferguson, Langley Township
 Councillor Peter Fry, Vancouver

STAFF PRESENT:

Jerry W. Dobrovolny, Chief Administrative Officer
 Paul Henderson, General Manager, Solid Waste Services
 Morgan Mackenzie, Legislative Services Coordinator, Board and Information Services

1. ADOPTION OF THE AGENDA

1.1 July 13, 2023 Meeting Agenda

It was MOVED and SECONDED

That the Zero Waste Committee:

- a) amend the agenda for its regular meeting scheduled for July 13, 2023, to consider Item 9 following the adoption of the agenda;
- b) amend the agenda for its regular meeting scheduled for July 13, 2023, by adding Item 3.1 Late Delegation - Lori Bryan, Waste Management Association of BC (WMABC); and
- c) adopt the agenda as amended.

CARRIED

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

9. RESOLUTION TO CLOSE MEETING

It was MOVED and SECONDED

That the Zero Waste Committee close its meeting scheduled for June 15, 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; and
- (i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose”.

CARRIED

Recess

The Zero Waste Committee recessed at 1:04 pm and reconvened at 1:48 pm with the same members being in attendance, with the addition of Vice Chair Hodge.

2. ADOPTION OF THE MINUTES

2.1 June 15, 2023 Meeting Minutes

It was MOVED and SECONDED

That the Zero Waste Committee adopt the minutes of its meeting held June 15, 2023 as circulated.

CARRIED

3. DELEGATIONS

3.1 Lori Bryan, Waste Management Association of BC (WMABC)

Lori Bryan, Waste Management Association of BC (WMABC), spoke to members of the Zero Waste Committee regarding the lack of consultation with the industry relating to the Smart Waste Program. Lori expressed concerns with the program, including obtaining proprietary information and intellectual property of waste collectors and generators without consent, sharing waste services’ private routing information via *Freedom of Information Act* requests, and the potential contamination of waste streams.

Lori requested that the committee not accept the Smart Waste Report and to direct staff to consult with all affected industry members.

4. INVITED PRESENTATIONS

No items presented.

5. REPORTS FROM COMMITTEE OR STAFF

5.1 Draft Solid Waste Services 2024 - 2028 Capital Plan

Report dated July 5, 2023, from Lynne Vidler, Lead Senior Engineer, Solid Waste Services, providing the Zero Waste Committee with the draft Solid Waste Services 2024 – 2028 Capital Plan for input and feedback, which will then be incorporated into the fall budget approvals.

Members were provided with a presentation on capital plan objectives, capital plan drivers, major projects and changes, the North Surrey and Langley Recycling Depots, biosolids processing, the waste to energy facility district energy project, solid waste capital expenditures, the proposed capital plan, and the next steps in implementing the capital plan.

Presentation material titled “Solid Waste Services” is retained with the July 13, 2023 Zero Waste Committee agenda.

It was MOVED and SECONDED

That the Zero Waste Committee receive for information the report dated July 5, 2023, titled “Draft Solid Waste Services 2024 – 2028 Capital Plan”.

CARRIED

5.2 Solid Waste Services Capital Program Expenditure Update as of April 30, 2023

Report dated July 5, 2023, from Parul Sidhu, Assistant Project Engineer, Solid Waste Services, providing the Zero Waste Committee with an update on the status of the Solid Waste Services capital program and financial performance to April 30, 2023.

It was MOVED and SECONDED

That the Zero Waste Committee receive for information the report dated July 5, 2023, titled “Solid Waste Services Capital Program Expenditure Update as of April 30, 2023”.

CARRIED

5.3 Solid Waste Management Plan: Vision and Guiding Principles Engagement Initial Feedback

Report dated July 5, 2023, from Stephanie Liu, Senior Engagement Specialist, Solid Waste Services, providing the Zero Waste Committee with a summary of engagement with and feedback received from First Nations, member jurisdictions, adjacent regional districts, and advisory committees on the vision and guiding principles for the updated solid waste management plan, prior to launching public engagement.

Members were provided with a presentation on the solid waste management plan engagement process, highlighting the vision and guiding principles, engagement feedback, methods of gathering feedback, the First Nations' input, overview of engagement with member jurisdictions, adjacent regional districts and advisory committees, the Committee's feedback, the collaborative engagement approach, and next steps.

Presentation material titled "Solid Waste Management Plan" is retained with the July 13, 2023 Zero Waste Committee agenda.

It was MOVED and SECONDED

That the Zero Waste Committee receive for information the report dated July 5, 2023, titled "Solid Waste Management Plan: Vision and Guiding Principles Engagement Initial Feedback".

CARRIED

5.4 Draft Tipping Fee Bylaw Updates

Report dated July 7, 2023, from Allen Jensen, Senior Project Engineer, Solid Waste Services, providing the Zero Waste Committee with draft updates to the Tipping Fee Bylaw in advance of engagement with interested parties.

Members were provided with a presentation on the draft updates to the Tipping Fee Bylaw, including information on waste reduction and recycling achievements, the regional solid waste system, benchmark of utility costs, the tipping fee and solid waste disposal regulation, tipping fee components, the generator levy and its benefits, the engagement process, and next steps.

Presentation material titled "Draft Tipping Fee Bylaw Updates" is retained with the July 13, 2023 Zero Waste Committee agenda.

It was MOVED and SECONDED

That the Zero Waste Committee receive for information the report dated July 7, 2023, titled "Draft Tipping Fee Bylaw Updates".

CARRIED

5.5 Smart Waste Program

Report dated July 7, 2023, from Allen Jensen, Senior Project Engineer, Solid Waste Services, providing the Zero Waste Committee with a new smart waste program that uses electronic location-based data collection devices to better understand the movement of garbage around the region.

It was MOVED and SECONDED

That the Zero Waste Committee receive for information the report dated July 7, 2023, titled "Smart Waste Program".

CARRIED

5.6 2022 Disposal Ban Program Update

Report dated July 6, 2023, from Brandon Ho, Senior Project Engineer, Solid Waste Services, providing the Zero Waste Committee with the annual update to the Zero Waste Committee on the 2022 results of the Metro Vancouver disposal ban program.

It was MOVED and SECONDED

That the Zero Waste Committee receive for information the report dated July 6, 2023, titled "2022 Disposal Ban Program Update".

CARRIED

5.7 Manager's Report

Report dated July 6, 2023, from Paul Henderson, General Manager, Solid Waste Services, providing the Zero Waste Committee with updates on the City of Surrey Disposal Days, residential used gypsum disposal program availability, sharing Metro Vancouver's "Food Scraps Aren't Garbage" campaign with the United States Environmental Protection Agency, the River District Community Energy Centre, and opportunities for house relocation.

Members were also provided an update on procurement processes for the solid waste management plan update, the North Surrey and Langley Recycling Depot development, and Zero Waste for Schools pilot program.

It was MOVED and SECONDED

That the Zero Waste Committee receive for information the report dated July 6, 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.

10. ADJOURNMENT/CONCLUSION

It was MOVED and SECONDED

That Zero Waste Committee close its meeting of July 13, 2023.

CARRIED
(Time: 2:56 pm)

Morgan Mackenzie,
Legislative Services Coordinator

Sarah Kirby-Yung,
Chair

61194259 FINAL

To: Zero Waste Committee

From: Jessica Yamamoto, Assistant Project Engineer, Solid Waste Services

Date: September 6, 2023 Meeting Date: September 14, 2023

Subject: **Summary of Municipal Waste Collection Service Models**

RECOMMENDATION

That the Zero Waste Committee receive for information the report dated September 6, 2023, titled "Summary of Municipal Waste Collection Service Models".

EXECUTIVE SUMMARY

Metro Vancouver member jurisdictions typically provide or coordinate solid waste collection services for single family properties in the region. Currently, 84% of the single family properties in Metro Vancouver receive every-other-week garbage collection and 95% receive weekly green bin collection. The majority of single family residences in the region receive weekly multi-stream recycling collection using bags and bins, with the remainder receiving every-other-week single stream recycling collection using wheeled carts. Members fund single family garbage and green bin programs through utility fees, property taxes, or a combination of both. Residential recycling of packaging and paper is funded through Recycle BC with the service provided by the municipalities under contract with Recycle BC or directly by Recycle BC. Most municipalities have a standard set of material collected as determined by Recycle BC. Any deviation from the standard requires specific approval by Recycle BC.

PURPOSE

The purpose of this report is to provide the Zero Waste Committee with information on solid waste collection services provided to single family residential properties in Metro Vancouver.

BACKGROUND

In April 2016 the GVS&DD Board received a report titled "Single Family Every-Other-Week Garbage Collection – Status Update" (Attachment 1) describing how approximately 70% of the region's population residing in single family homes were receiving every-other-week garbage collection. The report described how, with the inclusion of food scraps in green bin programs, switching to every-other-week garbage collection while increasing to weekly organics collection resulted in an average of 33% less garbage requiring disposal.

In February 2023 Zero Waste Committee members requested information on solid waste collection services provided to single family residential properties¹ in the region.

¹ There are variations across the region in what is considered a single family home for the purpose of solid waste collection. Examples include detached homes, homes with a secondary suite, homes with a laneway house, and houses converted to duplexes, triplexes and fourplexes.

SINGLE FAMILY PROPERTY SOLID WASTE COLLECTION PROGRAMS IN METRO VANCOUVER

In most cases, Metro Vancouver members manage the collection of garbage and green bin organics from single family properties within their jurisdiction. Packaging and paper are managed under the Recycle BC program with collection either through the municipality under contract with Recycle BC or directly by Recycle BC. While there are many similarities across the region in terms of collection services provided by members, there are instances where services are different depending on the needs and circumstances of individual members. The following sections provide a summary description of garbage, green bin, and recycling collection programs for single family homes across the region. Details of the services provided in each member jurisdiction are included in Table 1 below.

Table 1: Garbage, Green Bin and Recycling System Models

Member	Garbage Collection Frequency	Green Bin Collection Frequency ³	Recycling Collection Frequency	Recycling Streams and Materials Collected
Anmore	every-other-week	weekly	weekly	2 streams Separate paper, containers
Belcarra	N/A ¹	N/A ¹	N/A ¹	N/A
Bowen Island	every-other-week	weekly	N/A ¹	N/A
Burnaby	every-other-week	weekly	weekly	3 streams Separate paper, containers, glass
Coquitlam	every-other-week	weekly	weekly	3 streams Separate paper, containers, glass
Delta	weekly	weekly	weekly	3 streams Separate paper, containers, glass
Langley City	every-other-week	weekly	weekly	3 streams Separate paper, containers, glass
Langley Township	every-other-week	weekly	weekly	3 streams Separate paper, containers, glass
Lion's Bay	every-other-week	weekly	weekly	3 streams Separate paper, containers, glass
Maple Ridge	N/A ¹	N/A ¹	weekly	4 streams Separate paper, cans and cartons, glass, plastic containers
New Westminster	every-other-week	weekly	every-other-week ⁴	2 streams In cart - combined paper, plastic and metal containers; In bin - non-refundable glass (collected monthly)

North Vancouver City	every-other-week	weekly	weekly	3 streams
				Separate paper, containers, glass
North Vancouver District	weekly	weekly	weekly	3 streams
				Separate paper, containers, glass
Pitt Meadows	every-other-week	weekly	weekly	3 streams
				Separate paper, containers, glass
Port Coquitlam	every-other-week	weekly	every-other-week ⁴	1 stream
				Combined paper and containers
				Glass drop off only
Port Moody	every-other-week	weekly	every-other-week ⁴	2 streams
				In cart - combined paper, containers; In bin - non-refundable glass (collected monthly)
Richmond	every-other-week	weekly	weekly	3 streams
				Separate paper, containers, glass
Surrey	every-other-week	weekly	every-other-week ⁴	1 stream
				Combined paper and containers
				Glass drop off only
Tsawwassen First Nation ²	weekly	weekly	weekly	1 stream
				All combined
Vancouver	every-other-week	weekly	weekly	3 streams
				Separate paper, containers, glass
West Vancouver	every-other-week	weekly	weekly	3 streams
				Separate paper, containers, glass
White Rock	every-other-week	weekly	weekly	3 streams
				Separate paper, containers, glass

¹ Residents are responsible for bringing their material to a recycling depot or waste facility.

² Residents must opt in to municipal waste collection for garbage, recyclables and organics.

³ Some members change green bin collection frequency and capacity seasonally.

⁴ Collect mixed recycling in large carts every-other-week.

Garbage and Green Bin Collection

Overall, 84% of the single family properties in the region receive every-other-week garbage collection. With the exception of jurisdictions where residents rely primarily on depots or where residents individually contract for services, all members provide weekly green bin collection service (food scraps with yard trimmings) to single family properties.

Recycling Collection

Most single family residences in the region are provided with weekly multi-stream recycling collection of paper products, plastic and metal containers, and glass using bins and bags. Other single family home residents are provided with every-other-week mixed stream recycling collection using large carts. Collection service is either through the municipality under contract with Recycle BC or is provided directly by Recycle BC through a contractor. Most municipalities have a standard set of material collected as determined by Recycle BC. Any deviation from the standard requires specific approval by Recycle BC.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications to Metro Vancouver for garbage, green bin and recycling collection services provided to single family properties within member jurisdictions. Those services are funded by the municipalities through either utility fees or property taxes.

CONCLUSION

This report summarizes single family residential waste collection schedules and programs provided across the region. The provision of regular green bin and recycling collection to single family residential properties across the region has likely contributed to the increase in recycling rates and the decrease in disposal rates seen in recent years with the current recycling rate at 65%.

Attachments

1. Report titled "Single Family Every-Other-Week Garbage Collection – Status Update" dated, April 7, 2016

58462354

To: Zero Waste Committee

From: Marcel Pitre, Division Manager, Solid Waste Services

Date: April 7, 2016 Meeting Date: April 14, 2016

Subject: **Single Family Every-Other-Week Garbage Collection – Status Update**

RECOMMENDATION

That the GVS&DD Board receive the report titled “Single Family Every-Other-Week Garbage Collection – Status Update”, dated April 7, 2016 for information.

PURPOSE

This report presents disposal and recycling data outlining the effects of every-other-week garbage collections programs on the single-family sector.

BACKGROUND

In recent years, many municipalities have modified the single-family waste collection system to include weekly residential food scraps collection in their existing yard trimmings bin. In conjunction with this change, municipalities have also implemented every-other-week garbage collection to further promote the use of the food scraps diversion programs and to maintain or reduce truck trips.

Metro Vancouver has been tracking the effects of this shift on both the garbage and recycling tonnages in the region. This report outlines some key performance metrics of that program and lessons learned in implementation and operation.

EFFECTS ON RESIDUAL GARBAGE AND RECYCLING TONNAGES

Currently, approximately 70% of the single family population in the region have every-other-week garbage collection. On average, municipalities that use the system dispose of 109 kg/person per year versus 148 kg/person per year for those who collect garbage every week.

In order to estimate the performance and effects of switching to every-other-week garbage collection, Metro Vancouver has investigated disposal tonnages before and after the change. On average, municipalities that have changed their collection method have seen a 33% reduction in the tonnage of waste disposed with reductions ranging from 26% to 43%. A reduction of 33% in garbage for 70% of the single family population in the region translates to a reduction in 58,000 tonnes per year of garbage.

Changes to every-other-week garbage collection have in many cases been implemented in parallel with expansion of organics collection programs. Typically organics collection has been expanded to include all food scraps and organics collection has been changed from every-other-week to weekly. The change in recycling and organics quantities following implementation of every-other-week garbage collection is more difficult to calculate than changes in garbage disposal. Other factors such as decreasing newsprint and changes in packaging seem to have the biggest impact on recycling quantities. Organics collection in communities with every-other-week garbage collection saw on

average an increase of over 30% in organics collection following implementation of every-other-week garbage collection.

As noted above, some of the change in recycling and organics collection could be attributed to changes in those programs implemented in parallel to every-other-week garbage collection.

Changes to every-other-week garbage collection has not resulted in any significant increases in small vehicle traffic at transfer stations.

The Attachment shows examples of 3 municipalities' monthly disposal tonnages before and after every-other-week garbage collection with associated percent increases in annual recycling tonnage.

IMPLEMENTATION CHALLENGES

As with most changes to waste and recycling collection programs, challenges may need to be overcome. In the case of the implementation of every-other-week collection, in conjunction with weekly food scraps collection, there challenges related to: infrastructure, service level (capacity), operations, contamination and dumping in other systems.

Infrastructure

Municipal infrastructure requirements for the implementation is dependent on each municipalities' particular needs and whether or not the program is made in conjunction with another program such as food scraps collection or special carts for automated collection. There may be a requirement to add a larger collection bin if requested by residents, dispose of old bins or add a collection vehicle.

Service Level

In many cases, municipalities had received requests to increase the capacity of the disposal bin as part of switching to every-other-week garbage collection. In addition, some municipalities offered exemptions for special cases where an every-other-week frequency would not be sufficient (.In general, municipalities received service requests or complaints early in the deployment of the new programs and those requests dropped off shortly thereafter.

Operations

The implementation of every-other-week garbage collection may involve a re-routing evaluation for not only the garbage collection schedules, but also the organics routes. The increase in volume of organics may require route compression, the addition of a collection trip or an additional vehicle to the fleet.

Contamination or dumping in other systems

As new programs are put in place, there is a learning period for the residents that may cause an increase in contamination of the recycling streams. Some municipalities needed to allow for extra education, lettered communications, pre-collection inspections and/or tagging of bins to address the issue and meet the contamination requirements of the organics processor(s). In some instances, an increase in household waste had been noted in public space waste containers. Similarly, this may also lead to household waste ending up in commercial dumpsters.

ALTERNATIVES

This is an information report and therefore no alternatives are presented.

FINANCIAL IMPLICATIONS

Costs related to the implementation of every-other-week garbage collection fall under the responsibility of each individual municipality. The decision to implement such a program would be evaluated on a case by case basis taking into account a number of capital and operational requirements.

SUMMARY

Currently, approximately 70% of the single family population in the region have every-other-week garbage collection. On average, municipalities that have changed their collection method have seen a 33% reduction in the tonnage of waste disposed. On average, municipalities that use the system dispose of 109 kg/person per year versus 148 kg/person per year for those who collect garbage every week. When comparing the year previous and the year after the implementation, organics tonnages have increased by an average of over 30%.

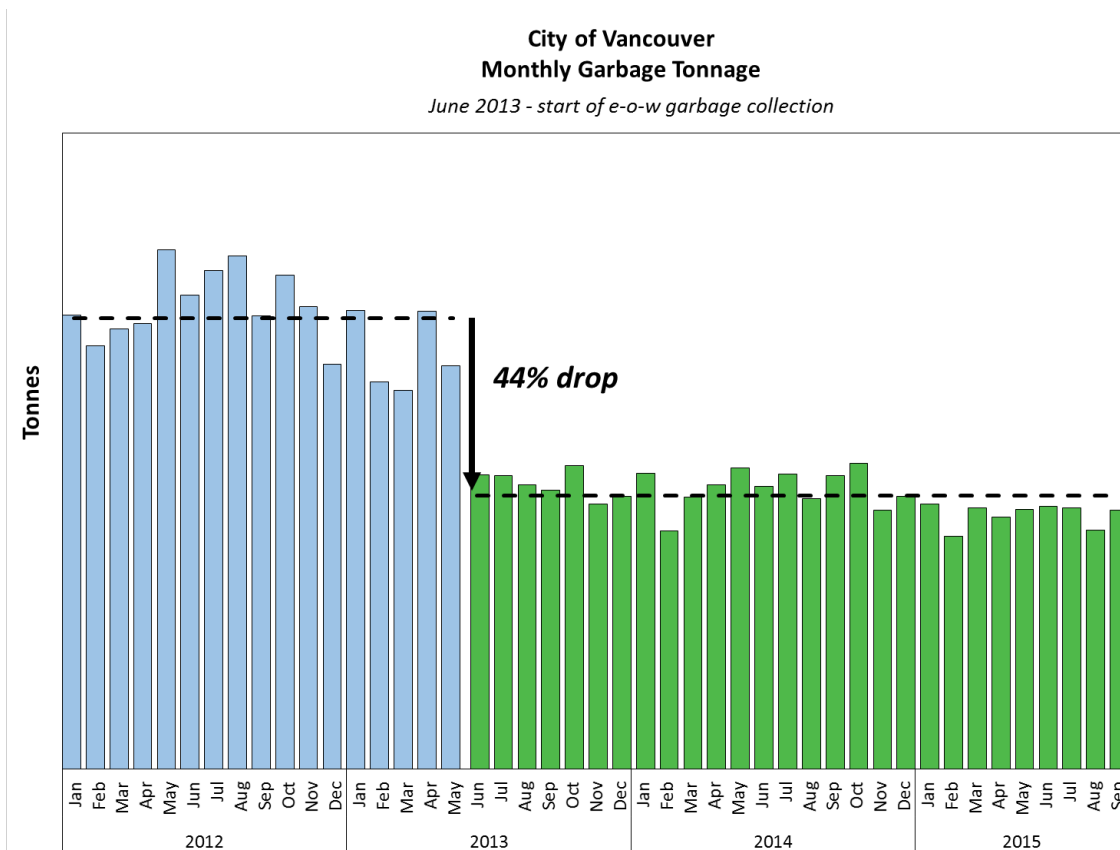
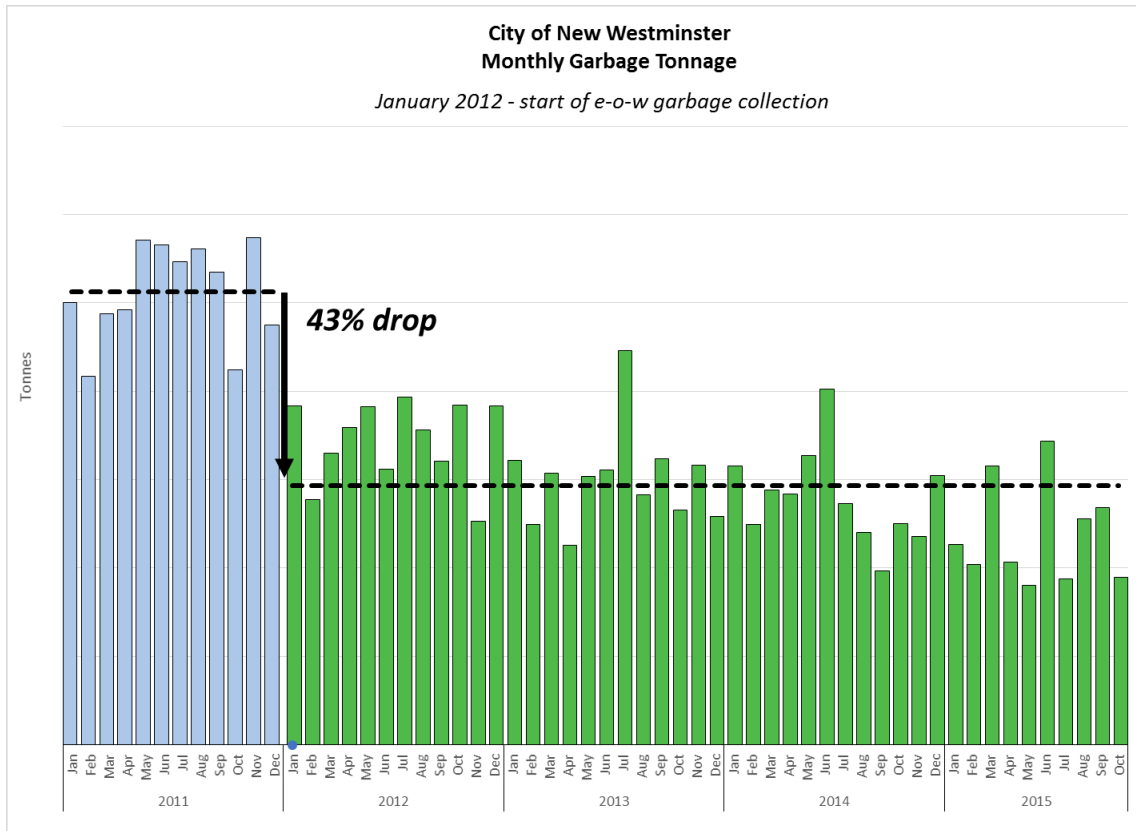
This change to the waste and recycling collection program creates challenges relate to: infrastructure, service level (capacity), operations, contamination and dumping in other systems. There may be a requirement to add a larger collection bin, dispose of previous bins, change or compress garbage or organics routes or add a collection vehicle in rare cases. In general, municipalities received service requests or complaints early in the deployment of the new programs and those requests dropped off shortly thereafter.

The implementation of every-other-week garbage collection has had a notable reduction on the amount of waste disposed and an increase in recycling tonnages. There are a number of factors that influence waste reduction and diversion on a case-by-case basis. Despite challenges, the implementation of this program on its own or in conjunction with other diversion and education programs has had a significant impact on disposal behavior and has benefited many municipalities of Metro Vancouver.

Attachments and References:

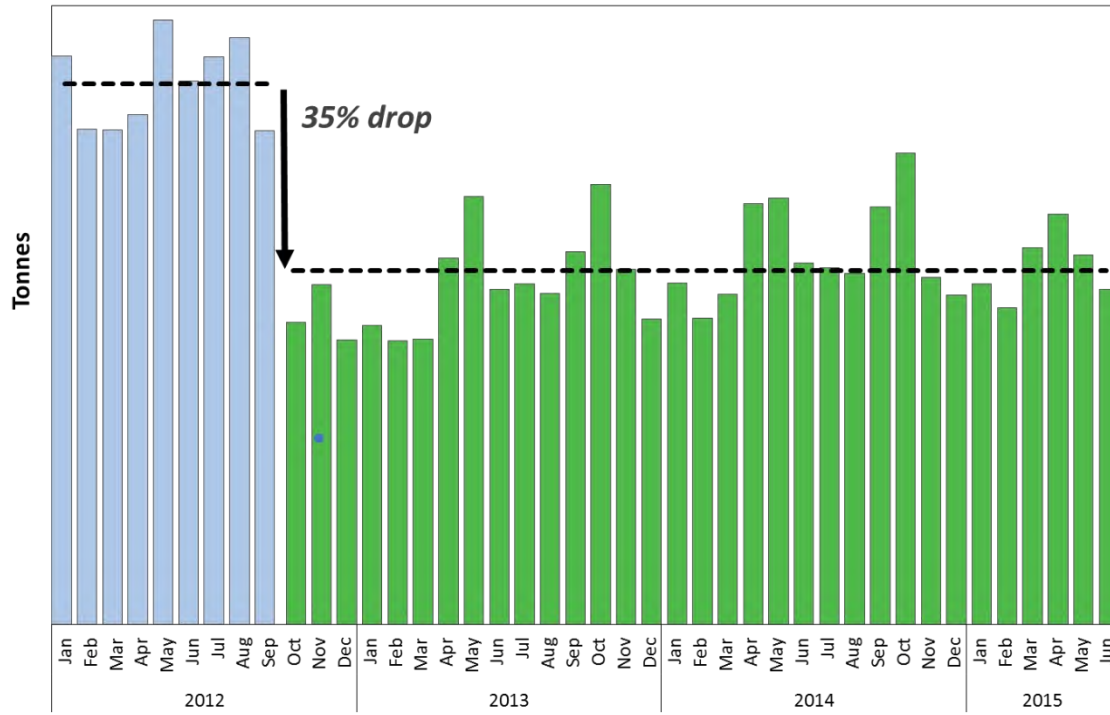
Attachment – Municipal monthly garbage tonnage change and corresponding recycling change

17800856



City of Surrey Monthly Garbage Tonnage

October 2012 - start of e-o-w garbage collection



To: Zero Waste Committee

From: Brent Kirkpatrick, Lead Senior Engineer, Solid Waste Operations,
Solid Waste Services

Date: September 7, 2023 Meeting Date: September 14, 2023

Subject: **Waste-to-Energy Facility Environmental Monitoring and Reporting 2022 Update**

RECOMMENDATION

That the Zero Waste Committee receive for information the report dated September 7, 2023, titled “Waste-to-Energy Facility Environmental Monitoring and Reporting 2022 Update.”

EXECUTIVE SUMMARY

This report provides the Waste-to-Energy environmental performance update for 2022.

All air emission related parameters monitored during 2022 were similar to 2021, and well below regulatory limits in the Waste-to-Energy Facility Provincial Operational Certificate. The Waste-to-Energy Facility’s contributions of nitrogen dioxide, fine particulates and anthropogenic (human caused) greenhouse gases are less than 1% of regional emissions.

In the fall of 2020 Metro Vancouver began monitoring ambient air parameter concentrations at a temporary air monitoring station immediately adjacent to the Waste-to-Energy Facility, and installed additional monitoring equipment at an existing monitoring station near the facility. Sulphur dioxide and hydrogen chloride ambient levels at less than 10% of ambient air objectives at both stations. Ninety-eight percent of the time, ambient sulfur dioxide and hydrogen chloride concentrations were less than 3% of ambient objectives. Ambient nitrogen dioxide levels are within ambient air quality objectives and lower than many other monitoring stations within the region. Analysis suggests that other regional sources are the primary drivers of ambient concentrations of these pollutants at both ambient air monitoring stations. Metro Vancouver is working on a request to the Province of British Columbia to amend the Waste-to-Energy Operational certificate to reflect the low ambient concentrations of sulfur dioxide and hydrogen chloride.

PURPOSE

The purpose of this report is to provide the Zero Waste Committee with an annual overview of the Waste-to-Energy Facility’s environmental monitoring program and implementation of Provincial Operational Certificate requirements.

BACKGROUND

Metro Vancouver continuously monitors the environmental performance of the Metro Vancouver Waste-to-Energy Facility and, since 2010, annual environmental performance summaries have been provided to the Zero Waste Committee.

This report provides updates on the facility's 2022 environmental performance and the implementation of the Waste-to-Energy Facility Provincial Operational Certificate requirements. The report is identified in the Zero Waste Committee annual work plan.

ENVIRONMENTAL MONITORING AND REPORTING UPDATE

Since the Waste-to-Energy Facility opened in 1988, Metro Vancouver has continually reduced emissions through assessment, operational and plant infrastructure improvements, and environmental controls. All air emission related parameters monitored during 2022 were in compliance with the requirements of Operational Certificate 107051. A summary of historic annual emission performance, including 2022 data, is found in Attachment 1.

To assess regulatory compliance, measurements from the environmental monitoring program are compared to the regulatory limits specified in the Waste-to-Energy Facility Operational Certificate 107051 issued by the BC Ministry of Environment and Climate Change Strategy. Results are reported in the following ways:

- Monthly compliance reports, which provide a summary of all air emissions monitoring results for each month, are provided to the BC Ministry of Environment and Climate Change Strategy, City of Burnaby, and Fraser Health Authority; and are posted publicly on the Metro Vancouver website;
- Manual stack testing is conducted by an independent stack testing company four times per year for particulate matter, trace metals, and hydrogen fluoride. Results are provided to the BC Ministry of Environment and Climate Change Strategy, City of Burnaby, and Fraser Health Authority; and are posted publicly on the Metro Vancouver website;
- Manual stack testing for semi-volatile organic compounds is conducted once per year by an independent stack testing company and results are provided to the BC Ministry of Environment and Climate Change Strategy, City of Burnaby, and Fraser Health Authority; and are posted publicly on the Metro Vancouver website;
- Annual reporting of greenhouse gas emissions is provided to the BC Ministry of Environment and Climate Change Strategy and Environment and Climate Change Canada; and
- Annual reporting of substances emitted to air and contained in ash transferred for off-site disposal is provided to Environment and Climate Change Canada for the National Pollutant Release Inventory.

Environmental Monitoring Program

The 2022 Waste-to-Energy Facility environmental monitoring program consisted of the following:

- Air Emissions Monitoring – Continuous Emission Monitoring System:
 - The Waste-to-Energy Facility is equipped with a real-time flue gas continuous emission monitoring system that measures and records emission parameters at the exit of the air pollution control plant 24 hours per day, seven days a week, using a United States Environmental Protection Agency certified and auditable tracking system.

- The following parameters are measured: sulphur dioxide, nitrogen oxides, carbon monoxide, carbon dioxide, hydrogen chloride, total hydrocarbons, and opacity.
- The following key operational parameters are also monitored: furnace temperature, total flue gas flow, flue gas moisture, and flue gas oxygen. This monitoring provides an indication of plant operational conditions and helps confirm that emissions monitored by manual stack testing are accurate.
- Air Emissions Monitoring – Periodic Manual Stack Testing:
 - Triplicate tests are conducted four times per year on each of the three plant lines to measure particulate matter, trace metals, and hydrogen fluoride.
 - A single test is conducted annually on one boiler (rotating between boilers each year) in triplicate to monitor for semi-volatile organic compounds, including dioxins and furans, chlorobenzenes, chlorophenols, polychlorinated biphenyls, and polycyclic aromatic hydrocarbons.
- Fly and Bottom Ash Monitoring:
 - Each fly ash load is tested prior to transport and disposal.
 - Bottom ash samples are collected from each truck loaded with bottom ash for transport and disposal. Samples are combined to form a weekly composite sample for analysis.
 - On May 20, 2021, the Ministry of Environment and Climate Change Strategy approved Metro Vancouver’s 2020 Bottom Ash Management Plan. The 2020 Plan allows for the potential beneficial use of bottom ash that has been processed through the Waste-to-Energy Facility’s non-ferrous metal recovery system at cement plants. Metro Vancouver has contracted Birco Environmental Services to conduct a pilot test in support of the beneficial use of bottom ash.

Comparison with Regulatory Limits

Table 1 and Attachment 1 show comparisons for various emission parameters with regulatory limits. Overall, the Metro Vancouver Waste-to-Energy Facility operates well within environmental standards.

Table 1: 2022 Emissions Summary Table

Parameter (Average Values)	Units	Regulatory Levels	2022 Emissions Data	Percentage of Limit
<i>Manual Stack Tests:</i>				
Particulate Matter	mg/dscm	9	1.5	17%
Hydrogen Fluoride (HF)	mg/dscm	1	0.01	1%
Sum of Lead, Arsenic, and Chromium	ug/dscm	64.0	6.7	10%
Cadmium (Cd)	ug/dscm	7.0	0.6	9%
Mercury (Hg)	ug/dscm	20.0	0.1	0.5%
<i>Trace Organics Tests:</i>				
Dioxins/Furans (PCDD/PCDF)	ng/dscm	0.08	ND	-
Chlorophenols	ug/dscm	1	0.006	0.6%
Chlorobenzenes	ug/dscm	1	0.22	22%
Polycyclic Aromatic Hydrocarbons (PAHs)	ug/dscm	5	0.17	3%
Polychlorinated Biphenyls (PCBs)	ug/dscm	1	0.017	2%
<i>Continuous Emissions Monitoring System:</i>				
Nitrogen Oxides (NOx)		190	125	66%
Carbon Monoxide (CO)		50	24	48%
Sulphur Dioxide (SO ₂)		200	64	32%

Operational Certificate Implementation and Ambient Air Monitoring

On December 3, 2020, the Metro Vancouver Waste-to-Energy Facility Operational Certificate was amended to defer the reduction in discharge limits for hydrogen chloride and sulphur dioxide from December 31, 2022 to March 3, 2025. Dispersion modelling submitted to the Ministry of Environment and Climate Change Strategy in December 2018 indicated that with current emission and operational certificate permitted levels, maximum ambient air concentrations of hydrogen chloride and sulphur dioxide are not expected to exceed ambient air criteria. The extension allowed for additional ambient air monitoring to confirm concentration levels.

In the fall of 2020 Metro Vancouver installed an air quality monitoring station in the northwest corner of the Waste-to-Energy Facility site, which is near the location with the highest expected concentrations identified by the dispersion modelling. The station continuously measures hydrogen chloride, sulphur dioxide and nitrogen dioxide.

Metro Vancouver's existing Burnaby South air quality monitoring station was put in place in advance of the development of the Waste-to-Energy Facility with the goal of monitoring for any potential impacts of the Waste-to-Energy Facility on air quality. The instrumentation at the station, which already included sulphur dioxide and nitrogen dioxide monitoring, was upgraded in the fall of 2020 with the addition of a hydrogen chloride monitor.

In 2022, Metro Vancouver installed a meteorological station on the roof of the Waste-to-Energy Facility to provide more information on local meteorological conditions and allow comparison of measured ambient air quality concentrations to operations at the Waste-to-Energy Facility.

Metro Vancouver has engaged a consultant to evaluate the data for reporting to the Ministry of Environment and Climate Change Strategy. Hydrogen chloride, sulphur dioxide, and nitrogen dioxide data collected from both monitoring stations has been posted monthly on the Metro Vancouver website since December 2020. Within the 2-year monitoring period, no exceedances of short-term nor long-term (1-hour, 24-hour, and annual) ambient air quality objectives for nitrogen dioxide, sulphur dioxide and hydrogen chloride were recorded at either monitoring station.

Data collected to date (Attachment 2) shows 1-hour maximum ambient air concentrations of hydrogen chloride were 6% of the ambient air quality objectives at the Waste-to-Energy monitoring station, and 9% of the ambient objectives at the Burnaby South monitoring station. 98% of the time, ambient concentrations of hydrogen chloride are less than 3% of the ambient air quality objectives at both stations. A diurnal pattern in hydrogen chloride has been noted during the summer months.

1-hour maximum ambient air concentrations of sulphur dioxide were 10% of ambient air quality objectives at the Waste-to-Energy monitoring station, and 6% of the ambient objectives at the Burnaby South Station. 98% of the time, ambient concentrations of sulphur dioxide are less than 2% of the ambient air quality objectives at both stations. Peak 1-hour average SO₂ concentrations occurred midday on all days of the week, whereas operations at the Waste-to-Energy Facility are continuous.

Nitrogen dioxide levels were 76% and 62% of the 1-hour ambient air quality objective at the Waste-to-Energy Facility monitoring station and the Burnaby South station respectively, and lower than many other monitoring stations in the region, such as the Vancouver Airport and Vancouver Clarke Drive. The primary contributor to ambient nitrogen dioxide throughout the region is automobile exhaust, with peak readings at both monitoring stations occurring during peak traffic conditions. 95% of the time, ambient concentrations of nitrogen dioxide are 50% or less of the ambient air quality objectives at both stations.

Linear regression analysis determined that there was no statistically significant linear correlation between the Waste-to-Energy Facility continuous emissions monitoring system data and ambient air quality data for all three pollutants. This suggests other regional emission sources are the primary drivers of the ambient levels of nitrogen dioxide, sulphur dioxide and hydrogen chloride recorded at both the Waste-to-Energy Facility station and the Burnaby South station.

Metro Vancouver is working on a draft request to amend the Operational Certificate to reflect the results of the monitoring program analysis that shows observed ambient sulphur dioxide and hydrogen chloride concentrations are well below ambient objectives and suggests that observed ambient concentrations are primarily due to other regional emission sources and meteorological factors.

Greenhouse Gas Emissions Reporting

In mid-2009 the federal and provincial governments each enacted legislation requiring reporting of greenhouse gas emissions for facilities with annual emissions above specified thresholds of 50,000 tonnes (federal) and 10,000 (provincial) tonnes of carbon dioxide equivalent per year. Based on these thresholds, the Waste-to-Energy Facility is subject to federal and provincial reporting on both biogenic (renewable) and anthropogenic (man-made or non-renewable) greenhouse gas emissions.

Greenhouse gas emissions from the Waste-to-Energy Facility are comprised mainly of carbon dioxide with trace amounts of methane and nitrous oxides. The 2022 greenhouse gas emissions were verified by a third party consultant and reported to the provincial and federal governments. Non-biogenic emissions from the facility were 113,352 tonnes carbon dioxide equivalents, a 16% decrease from 2021. This decrease is primarily due to annual fluctuations in waste composition. Over the past five years, the non-biogenic portion of greenhouse gas emissions has ranged from 40% to 48%. In 2022 it was 40%.

Overall greenhouse gas emissions from the facility in 2022, including both non-biogenic and biogenic, were 285,747 tonnes carbon dioxide equivalents, a decrease of approximately 8% compared to 2021. This decrease is primarily due to decreased waste throughput at the Waste-to-Energy Facility as a result of ongoing capital upgrades. As in past reporting years, the Waste-to-Energy Facility accounted for less than 1% of all anthropogenic greenhouse gas emissions in the region.

National Pollutant Release Inventory Reporting

The National Pollutant Release Inventory is Canada's legislated, publicly accessible inventory of pollutant releases to air, water, and land, as well as from disposal and transfer for recycling. The National Pollutant Release Inventory is managed by Environment and Climate Change Canada and currently tracks over 300 substances and groups of substances. Metro Vancouver is required to report air emissions (e.g., particulate matter, metals, organic compounds, and acid gases) and substances transported for off-site disposal, including fly ash and bottom ash for the preceding calendar year, to the National Pollutant Release Inventory. Table 2 summarizes the information which has been reported to the National Pollutant Release Inventory.

Table 2: 2022 National Pollutant Release Inventory Substance Reporting Summary

Substance	Reported Quantity (tonnes)	
	Stack Emissions	Ash Disposal
Nitrogen Oxides	222	N/A
Carbon Monoxide	46	N/A
Sulphur Dioxide	113	N/A
Hydrogen Chloride/Hydrochloric Acid	75.8	N/A
Aluminum (dust)	0.022	N/A
Arsenic	0.00077	1.34
Cadmium	0.00036	1.38
Cobalt	0.0002	2.2
Copper	0.0024	85.2
Lead	0.004	23.0
Manganese	0.0014	28.0
Mercury	0.00007	0.049
Phosphorus	0.0037	587.9
Zinc	0.027	202.7
Particulate Matter ≤ 10µm	1.81	N/A
Particulate Matter ≤ 2.5µm	1.45	N/A
Dioxins and Furans	N/A	N/A
Hexachlorobenzene	N/A	N/A

Notes: - All other substances are below the National Pollutant Release Inventory level of quantification and are not required to be reported.

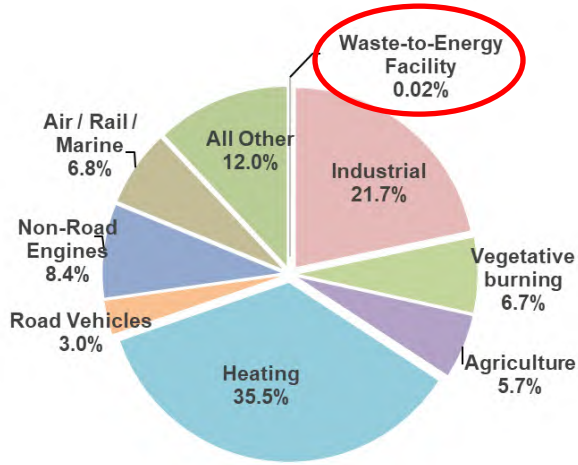
- 'N/A' indicates value is either below the level of quantification, below the detection limit, or the substance is not found in ash.

Waste-to-Energy Facility in a Regional Context

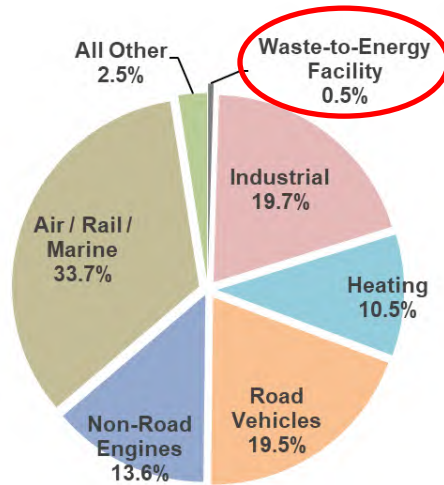
Figure 1 compares Waste-to-Energy Facility emissions to total emissions from all regional sources for two key air contaminants in the Lower Fraser Valley – fine particulate matter and nitrogen oxides (a key smog forming pollutant). In 2022, the Waste-to-Energy Facility accounted for 0.02% of regional fine particulate matter emissions and 0.5% of regional nitrogen oxide emissions. The Nitrogen Oxide Reduction Project, completed in October 2014, reduced nitrogen oxide emissions from 0.9% of the regional total in 2013 to 0.5% in 2022.

Figure 1: Regional Emissions Distribution (2022) – Fine Particulate Matter and Nitrogen Oxides

2022 Lower Fraser Valley Fine Particulate Matter Emission Sources



2022 Lower Fraser Valley Nitrogen Oxide Emission Sources



Comparison to Previous Year

Environmental performance data from 1988 to 2022 is included in Attachment 1. Environmental performance for the Waste-to-Energy Facility for 2022 was similar to 2021. Fine particulates and metals emissions showed some variability between the two years, but all continue to be well within regulatory limits.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Activities related to emissions monitoring and reporting are included in the approved Solid Waste Services operational budget.

CONCLUSION

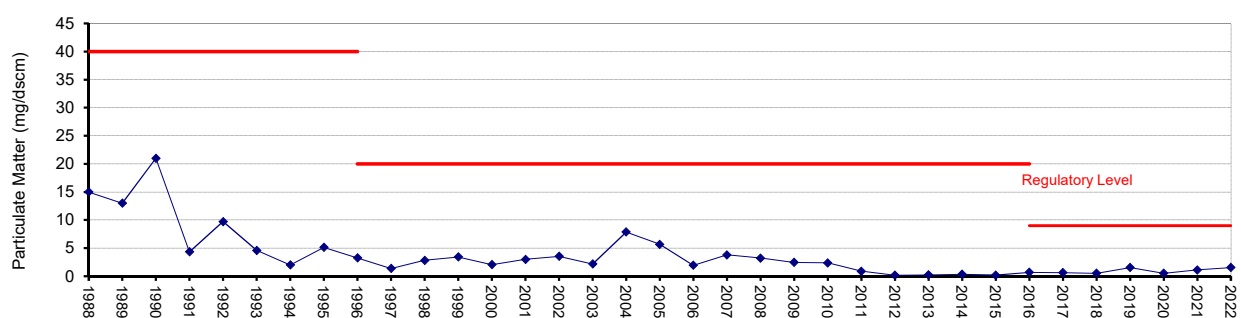
The Waste-to-Energy Facility operates well within environmental standards and regulatory limits. A range of projects that continuously improve the facility’s environmental performance have been completed or are underway. All air emission related parameters monitored during 2022 were in compliance with Operational Certificate 107051. Continuous emissions monitoring data and all compliance reports are available on the Metro Vancouver website. Ambient air monitoring at the Waste-to-Energy Facility and the nearby Burnaby South monitoring station show low levels of hydrogen chloride, sulfur dioxide and nitrogen dioxide, with analysis showing other emission sources as the primary drivers of the observed ambient concentrations for these parameters.

Attachments

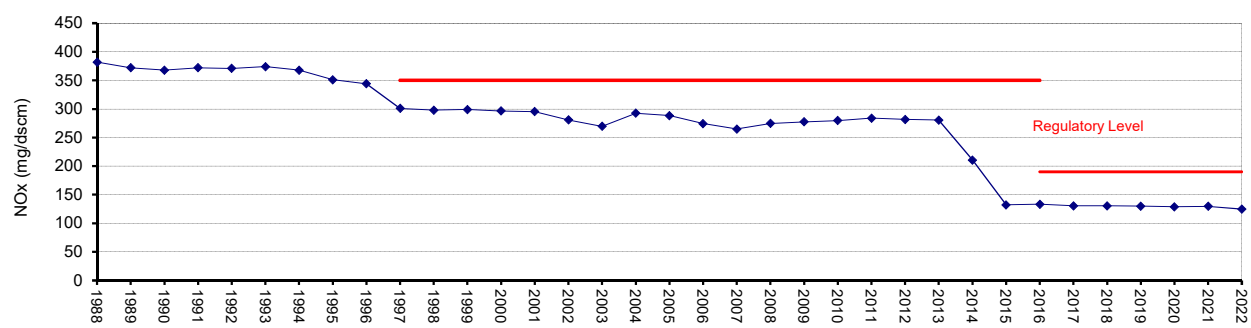
1. Metro Vancouver Waste-to-Energy Facility Summary of Air Emissions 1988-2022
2. Metro Vancouver Waste-to-Energy Facility 2022 Ambient Air Quality Report

Metro Vancouver Waste-To-Energy Facility Summary of Air Emissions 1988 - 2022

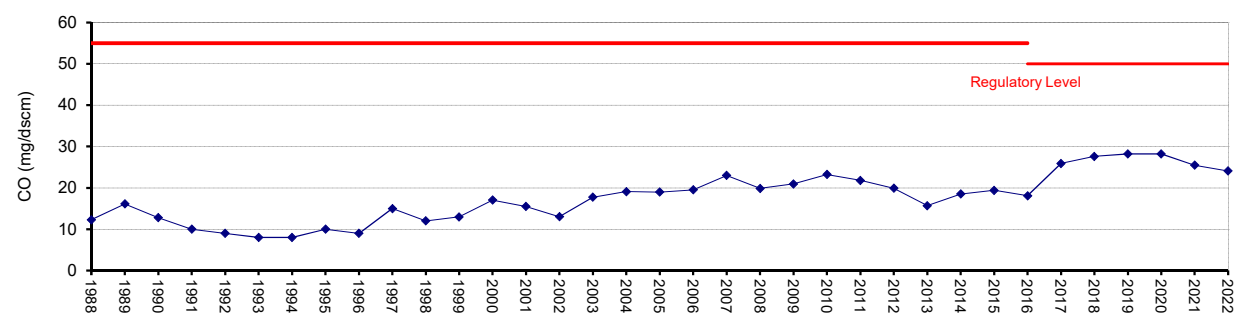
Particulate Matter



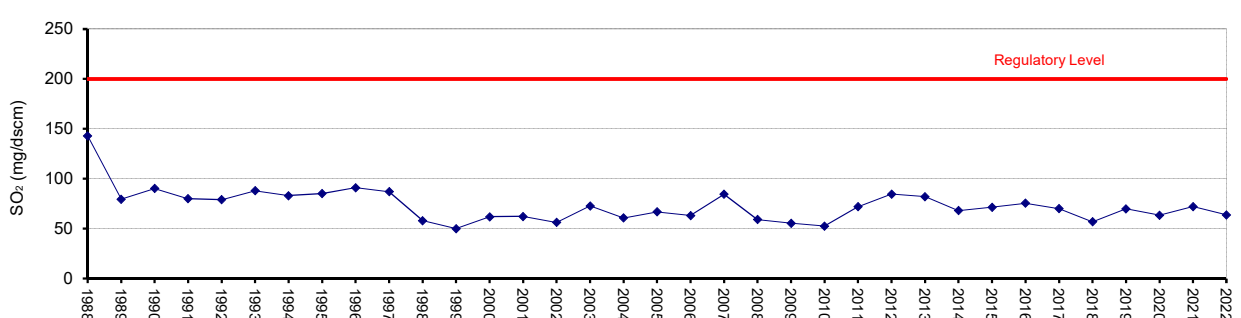
Nitrogen Oxides



Carbon Monoxide

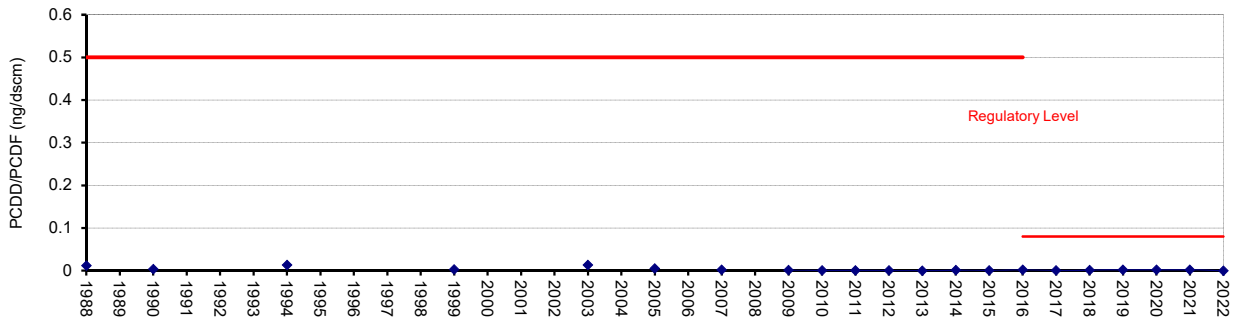


Sulfur Dioxide

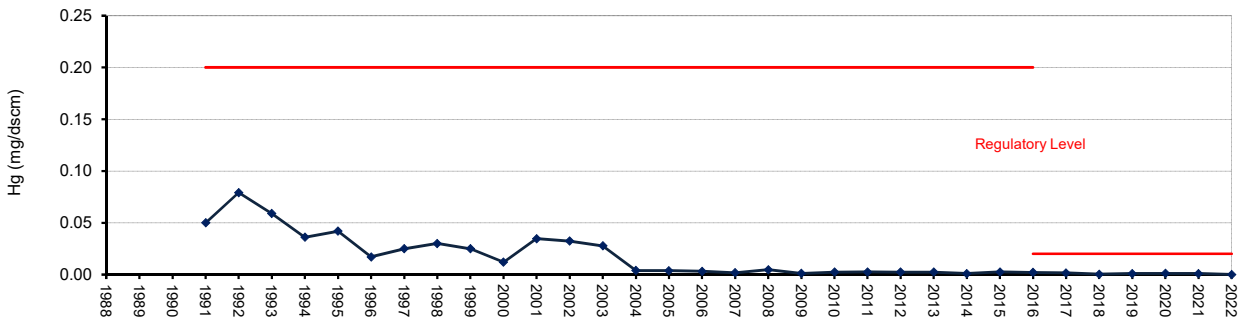


Metro Vancouver Waste-To-Energy Facility Summary of Air Emissions 1988 - 2022

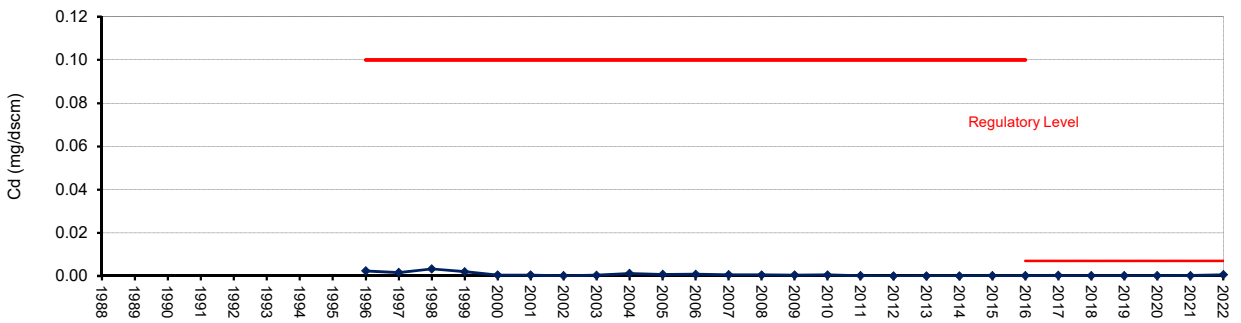
Dioxins/Furans



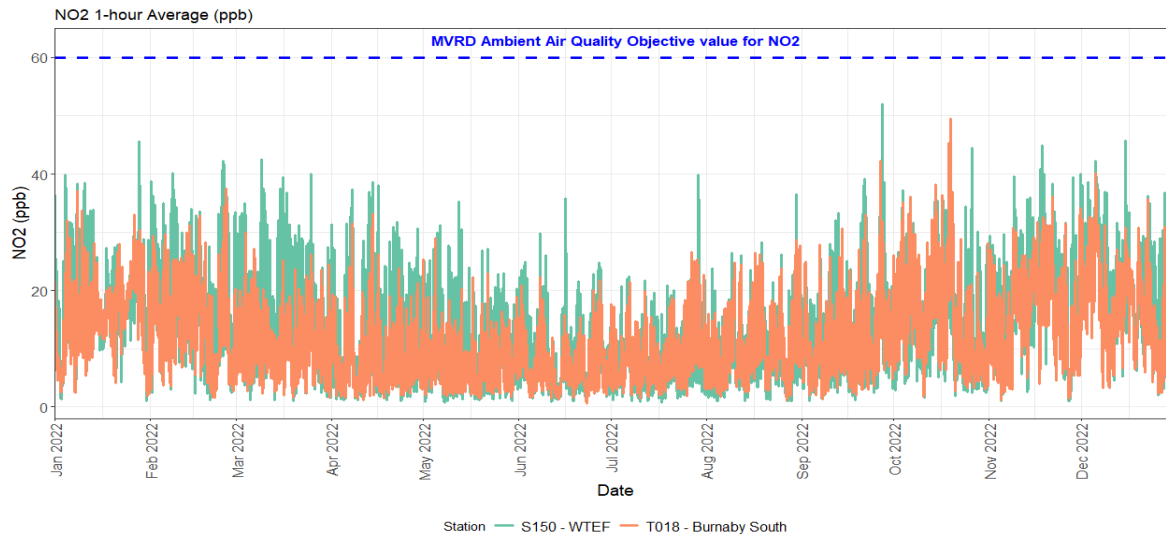
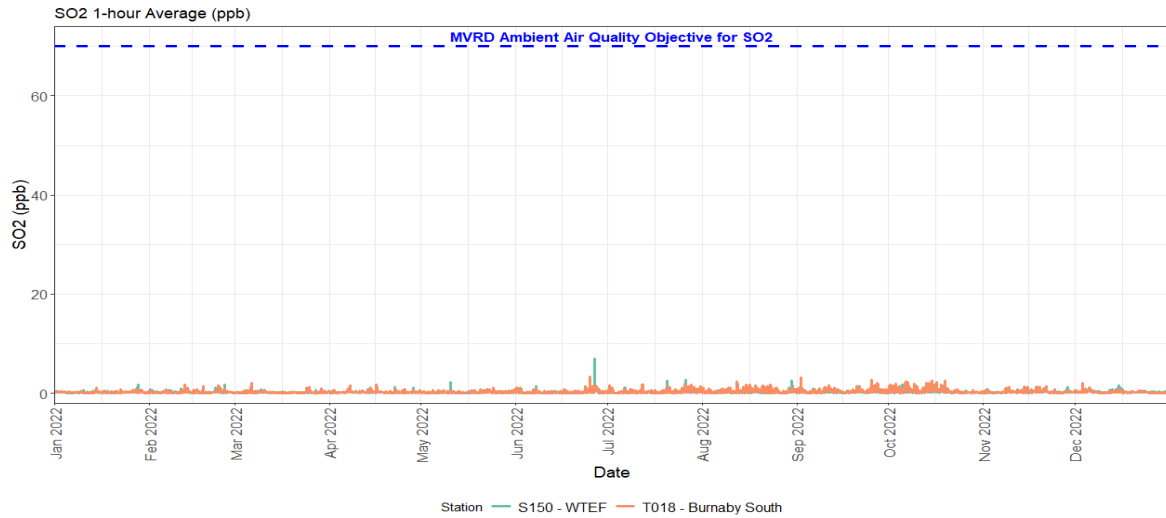
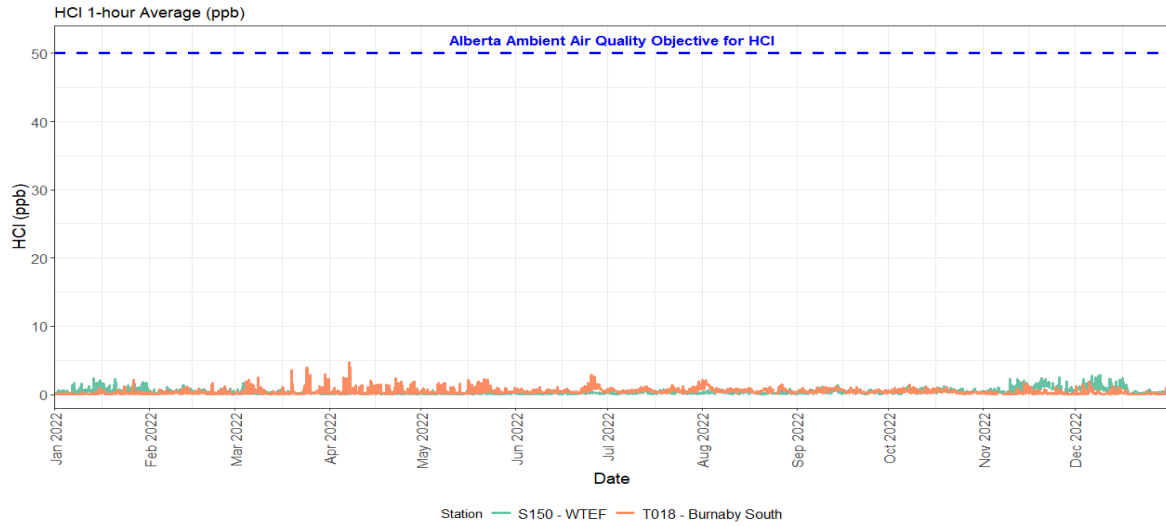
Mercury



Cadmium



Metro Vancouver Waste-to-Energy Facility 2022 Ambient Air Quality Report



To: Zero Waste Committee

From: Lynne Vidler, Lead Senior Engineer, Solid Waste Services

Date: September 5, 2023 Meeting Date: September 14, 2023

Subject: **Solid Waste Services Capital Program Expenditure Update as of June 30, 2023**

RECOMMENDATION

That the Zero Waste Committee receive for information the report dated September 5, 2023, titled “Solid Waste Services Capital Program Expenditure Update as of June 30, 2023”.

EXECUTIVE SUMMARY

The capital expenditure reporting process, as approved by the GVS&DD Board (the Board), provides for regular status reports on capital expenditures four times per year. In previous years, these reports were provided three times per year. This is the second report for 2023 which includes both the overall capital program for the solid waste utility with a multi-year view of capital projects, and the actual capital spending for the 2023 fiscal year to June 30, 2023 compared to the annual Capital Cash Flow. As of June 30, 2023, the capital expenditures for Solid Waste Services are \$2.1 million compared to a prorated annual Capital Cash Flow of \$21.4 million. The underspend is primarily due to the timing of the pre-construction phases of Waste-to-Energy Facility projects and recycling and waste center projects. Projects underway are expected to be completed within approved budgets.

PURPOSE

The purpose of this report is to provide an update on the status of the Solid Waste Services capital program and financial performance to June 30, 2023.

BACKGROUND

The capital expenditure reporting process, as approved by the Board, provides for regular status reports on capital expenditures with interim reports sent to the Water, Liquid Waste, and Zero Waste Committees, in July, September, November, with a final year-end report to the Committees and the Boards in April of each year. In previous years these reports were provided three times per year (July, November and April).

The series of four reports for 2023 look at both the overall capital program for Solid Waste Services with a multi-year view of capital projects and the actual capital spending for the 2023 fiscal year to June 30, 2023 compared to the annual Capital Cash Flow.

2023 CAPITAL EXPENDITURES

Solid Waste Capital Program Funding

The capital spending for Solid Waste Services is funded through the Solid Waste Services operating budget by a combination of contribution to capital (pay-as-you-go funding) and debt service costs (principal and interest payments) which are generated from the regional ratepayers through tipping

fees. As a result, the annual impact on the ratepayers is less than the level of budgeted capital expenditures.

Overall Capital Program

The overall capital program for Solid Waste Services includes capital projects that require multiple years to complete. These projects are broken down into various phases such as project definition, pre-design, detailed design, and construction. The status at the completion of each phase informs appropriate costing of subsequent phases.

Expected capital costs for a number of projects were updated as part of the 2023-2027 capital plan to reflect the most current projections for these projects. With the rare exception, projects tend to complete with actual spending below the approved limits predominately due to savings on budgeted contingency amounts.

Attachment 1 provides detail behind the summary information, including specific capital projects, summary financial information. Attachment 2 provides additional project status information of some of the key projects.

2023 Capital Program Summary

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.

As of June 30, 2023, the capital expenditures for Solid Waste Services are \$2.1 million compared to a prorated budget of \$21.4 million. The underspend is primarily due to longer than expected pre-construction phases for a number of Waste-to-Energy Facility projects and recycling and waste center projects. The pre-construction phases include detailed design and third party engineering reviews.

Table 1 provides a summary of the 2023 actual spending to June 30, 2023 compared to the prorated annual Capital Cash Flow.

Table 1 – June 30 2023 Capital Spending Summary

Solid Waste Services	2023 Cash Flow to June 30, 2023	Actual Expenditures to June 30, 2023	% of 2023 Prorated Cash Flow
Landfills	\$ 3,075,000	\$ 734,805	24%
Recycling and Waste Centers	6,050,000	(362,733)	-6%
Waste to Energy Facilities	12,300,000	1,751,417	14%
Total	\$ 21,425,000	\$ 2,123,489	10%

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

Capital expenditures are funded internally (pay-as-you-go) and through debt financing. 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

As of June 30, 2023, the capital expenditures for Solid Waste Services are \$2.1 million compared to a prorated annual Capital Cash Flow of \$21.4 million. The underspend is primarily due to the timing of the pre-construction phases of the Waste-to-Energy Facility and recycling and waste center projects. Ongoing capital projects will be monitored to ensure they remain within the total project budgets.

Attachments

1. Solid Waste Services Capital Project Update – June 30, 2023
2. Solid Waste Services Capital Projects Status Information

61179616



Project Name	Primary Driver	Project Location	Years										Approved Capital Budget	Current Estimated Total Project Cost	% Complete		
			2023-2027 Capital Plan					2028	2029	2030	2031	2032					
Landfills																	
Alternative Fuel and Recyclables Recovery Centre	Opportunity	Coquitlam													-	60,000,000	0%
Coquitlam Landfill East Closure	Resilience	Coquitlam													5,000,000	5,000,000	1%
Coquitlam Landfill Gas Collection Upgrades	Maintenance	Coquitlam													8,100,000	8,100,000	82%
Coquitlam Landfill Lot 3 Development	Resilience	Coquitlam													5,000,000	5,000,000	95%
Coquitlam Landfill Pump Station Upgrade	Maintenance	Coquitlam													3,400,000	3,400,000	50%
Coquitlam Landfill: Leachate Collection System Grade Realignment	Resilience	Coquitlam													1,000,000	1,000,000	0%
Total Landfills															22,500,000	82,500,000	
Recycling and Waste Centres																	
Central Surrey Recycling and Waste Centre	Growth	Surrey													50,300,000	50,300,000	99%
Langley Recycling Depot Development	Upgrade	Langley Township													5,500,000	15,000,000	0%
Maple Ridge Recycling and Waste Centre Upgrades	Maintenance	Maple Ridge													2,000,000	2,000,000	0%
North Shore Recycling and Waste Centre Compactor Replacement	Maintenance	North Vancouver													-	4,000,000	0%
North Surrey Recycling and Waste Centre Compactor Replacement	Maintenance	Surrey													3,000,000	3,000,000	0%
North Surrey Recycling Depot Development	Upgrade	Surrey													29,500,000	35,590,000	1%
Weigh Scale Replacement	Maintenance	Regional													3,000,000	3,500,000	0%
Total Pump Stations															93,300,000	113,390,000	
Waste-to-Energy Facility																	
Acid Gas Reduction	Upgrade	Burnaby													2,000,000	50,250,000	1%
Air System Piping Replacement	Maintenance	Burnaby													300,000	300,000	0%
Biosolids Processing	Resilience	Burnaby													22,500,000	23,850,000	2%
Boiler and APC Roof Replacement	Maintenance	Burnaby													1,750,000	3,000,000	0%
Bottom Ash Crane Replacement	Maintenance	Burnaby													1,400,000	1,400,000	5%
Bottom Ash Processing	Opportunity	Burnaby													6,800,000	6,800,000	95%
Carbon Silo Replacement	Maintenance	Burnaby													-	2,400,000	0%
Compressed Air System Replacement	Maintenance	Burnaby													3,000,000	3,000,000	3%
Electrical Transformers Replacement	Maintenance	Burnaby													5,000,000	5,000,000	1%
Fabric Filter Hopper and Pulse Header Refurbishment	Maintenance	Burnaby													2,150,000	2,150,000	6%
Feed Hopper/Chute	Maintenance	Burnaby													2,600,000	2,600,000	90%
Feedwater Pump Replacement	Maintenance	Burnaby													1,000,000	1,000,000	60%
Fire Suppression System	Maintenance	Burnaby													1,400,000	1,400,000	1%
Fly Ash Silo Refurbishment	Maintenance	Burnaby													1,000,000	1,500,000	0%
Generation Bank Replacement	Maintenance	Burnaby													9,000,000	12,000,000	0%
Lime Silo Replacement	Maintenance														-	3,600,000	0%
Primary Economizer Replacement	Maintenance	Burnaby													7,000,000	7,000,000	35%
Primary Superheaters Replacement	Maintenance	Burnaby													4,000,000	4,000,000	0%
Programmable Logic Controllers Replacement	Maintenance	Burnaby													2,000,000	2,000,000	1%
Pug Mill Enclosure Ventilation System Replacement	Maintenance	Burnaby													1,000,000	1,500,000	0%
Refuse Crane	Maintenance	Burnaby													16,800,000	17,850,000	1%
Refuse Pit Bunker Door Replacement	Maintenance	Burnaby													600,000	1,000,000	0%
Secondary Economizers Replacement	Maintenance	Burnaby													6,000,000	6,000,000	0%
Soot Blower Piping Replacement	Maintenance	Burnaby													300,000	300,000	0%
Special Handle Waste Direct Feed System	Opportunity	Burnaby													-	10,000,000	0%
Stack Refurbishment	Maintenance	Burnaby													350,000	600,000	0%
District Energy	Opportunity	Burnaby													55,000,000	75,300,000	2%
District Energy Opportunities	Opportunity	Burnaby													2,300,000	2,300,000	54%
Total Waste-to-Energy Facility															155,250,000	248,100,000	
Grand Total Solid Waste Services																	
															271,050,000	443,990,000	
															66,300,000	134,700,000	0% (not Star
															200,750,000	309,290,000	On-going
															-	-	100% (comp
Total															267,050,000	443,990,000	

Solid Waste Services Capital Project Status Information**June 30, 2023**

Current major capital projects are expected to be completed within budget; however, Waste-to-Energy Facility projects are proceeding slower than expected and have resulted in reduced expenditures in 2023 compared to projected cash flows.

Recycling and Waste Centre Program

- Upgrades to the North Surrey and Langley Recycling and Waste Centres are in the planning stage. Enhanced recycling will be implemented at both of these facilities to provide free recycling drop off services ahead of the weight scales. Planning and design for these enhancements have started.
- The North Surrey compactor replacement project has been initiated and is expected to be completed in 2024.

Landfills Program

- A landfill gas collection system upgrade is required, including a new control room at the blower flare station. Detailed design is currently in the procurement process.
- In the leachate collection system, the upgraded west pump station is operational and procurement for the design of the east pump station is underway with assistance from Liquid Waste Services.
- The leachate collection system realignment/upgrade is expected to begin in 2023 after procurement and award of a new 5-year comprehensive environmental consulting services contract.
- The eastern lot at the Coquitlam Landfill (Lot #3) is currently undeveloped. Planning and design work has begun for the preparation of this site to receive final closure and prepare grades for future development. Initial work to ensure good site drainage is complete. The end use for the approximately 3-hectare site has yet to be determined, but will be used to expand the region's waste reduction and recycling services. In the interim a portion of the property is being used for temporary storage of houses being moved to new locations in an effort to save them from demolition.

Waste-to-Energy Program

- The Waste-to-Energy Facility district energy project is currently in the planning and design stage. The initial phase of this project will be constructed in 2024-2025 and consist of an energy centre constructed at the existing Waste-to-Energy Facility and an approximately 6 km long thermal energy transmission line to connect to the River District development project in south-east Vancouver. Multiple phases are anticipated for this project with connections to other development centres surrounding the Waste-to-Energy Facility.

- The refuse crane replacement project commenced with preliminary engineering in 2019. The next phases of the project include detailed design and procurement of the major capital items.
- Covanta commenced replacement of the back-up feedwater pumps as they have reached the end of their useful life.
- The feed hopper / chute replacement project started in late 2019. The feed hopper and feed chute replacement is now substantially complete.
- Ministry of Environment and Climate Change Strategy has approved proceeding with managing up to 25,000 tonnes per year of biosolids at the Waste-to-Energy Facility. The project is now in detailed design.
- The primary economizer project commenced with engineering and procurement services on November 6, 2020. Installation of the works will be completed during the fall 2023 outages.
- The compressed air system replacement project is underway, an engineering study which commenced on October 18, 2021 and is complete. The next phase of the project will include detailed design and procurement of the major capital items.
- The fabric filter / pulse header refurbishment project is underway, an engineering study commenced on December 2, 2021 and is complete. The next phase of the project will include detailed design and procurement of the major capital items.
- The fire detection system replacement project is underway, the upgrade is expected to be completed in 2024.
- The programmable logic controllers replacement project is underway, the upgrade is expected to be completed in 2024.
- The electrical transformer replacement project is underway, an engineering study which commenced on October 19, 2022 will be completed in 2023.

To: Zero Waste Committee

From: Nicole MacDonald, Program Manager Solid Waste Regulation, Environmental Regulation and Enforcement, Parks and Environment

Date: August 31, 2023 Meeting Date: September 14, 2023

Subject: **Appointment of Enforcement Officers**

RECOMMENDATION

That the GVS&DD Board:

- a) pursuant to the *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996* and the *Environmental Management Act*:
 - i. rescind the appointment of Ana Nic Lochlainn as an officer; and
 - ii. appoint Metro Vancouver employees, Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft as officers.
 - 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 Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*:
 - i. rescind the appointment of Ana Nic Lochlainn; and
 - ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft.
-

EXECUTIVE SUMMARY

Recent changes in staff have resulted in a need to update staff appointments as GVS&DD Board-designated officers under the *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*, the *Environmental Management Act*, and the *Offence Act*. Staffing changes are a result of retirements and promotions within Metro Vancouver. Staff recommend that the GVS&DD Board appoint staff and rescind appointments accordingly.

PURPOSE

To appoint four Metro Vancouver employees as Board-designated officers, and to rescind the appointment of one former officer.

BACKGROUND

Metro Vancouver's Solid Waste Regulatory Program supports the goals of the *Integrated Solid Waste and Resource Management Plan* by regulating the management of municipal solid waste and recyclable material at privately operated facilities.

Employment status changes for Metro Vancouver environmental regulatory staff have resulted in a need to update staff appointments to ensure appropriate authority to advance solid waste management goals. Three Officers recently retired and one Officer was promoted within Metro Vancouver, resulting in four vacancies recently being filled. The *Greater Vancouver Sewerage and*

Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996 grants authority to Board-designated officers.

ROLE OF ENFORCEMENT OFFICERS

Officers may enter property, inspect works, and obtain records and other information to promote compliance with the *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*.

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 *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*.

To ensure staffing support and flexibility, Officers are typically appointed for all three of Metro Vancouver’s environmental regulatory programs (air quality, liquid waste, and solid waste) regardless of which program they were initially recruited for.

ALTERNATIVES

1. That the GVS&DD Board:
 - a) pursuant to the *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996* and the *Environmental Management Act*:
 - i. rescind the appointment of Ana Nic Lochlainn as an officer; and
 - ii. appoint Metro Vancouver employees Jason Assam, Karnjit Bains, Cynthia Barros, and Amanda Craft, as officers.
 - 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 Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*:
 - i. rescind the appointment of 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 31, 2023, titled “Appointment of Enforcement Officers” and provide alternative direction to staff.

FINANCIAL IMPLICATIONS

There are no financial implications anticipated as the GVS&DD appointees are already employed by Metro Vancouver 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 under the *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*, the *Environmental Management Act*, and the *Offence Act*. Staff recommend that the GVS&DD Board approve Alternative 1.

To: Zero Waste Committee

From: Pau Henderson, General Manager, Solid Waste Services

Date: September 7, 2023 Meeting Date: September 14, 2023

Subject: **Manager's Report**

RECOMMENDATION

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

BC Single-Use and Plastic Waste Prevention Regulation

On July 14, 2023, the Minister of Environment and Climate Change Strategy announced a new *Single-Use and Plastics Waste Prevention Regulation*. The regulation comes into effect on December 20, 2023, at the same time as the federal *Single-use Plastic Prohibition Regulation*. The new regulation includes the following province-wide directives:

- Ban on plastic bags with minimum fees for alternatives
 - Drive-through and food delivery services are exempt from charging fees, but must use recycled paper bags
- Ban on the use of oxo-degradable plastics
- Ban on the use of biodegradable plastic, polystyrene foam, PVC and polyvinyl chloride, and polyvinylidene chloride in food packaging
 - Foam meat trays are exempt until July 1, 2030
- Ban on use of compostable plastics in: bowls, boxes or cartons (including egg cartons), cups, hinged or lidded containers, plates, platters, trays, and film wrap
 - Compostable plastic-lined paper products such as coffee cups and soup bowls are exempt
- Ban on single-use plastic utensils including splash plugs (commonly used to prevent coffee from spilling) and stir sticks
- Ban on the bundling of single-use items. For example, no pre-wrapped or packaged utensil sets
- Customers must request or opt-in to receiving single-use beverage lids, beverage sleeves, condiments, drinking straws, garnishes (such as plastic sushi seaweed), napkins, utensils, wet wipes
 - Self-serve stations are considered a form of opt-in
 - This requirement applies to all material types, not just plastic

Province-wide measures are important to achieve greater harmonization across jurisdictions, which reduces confusion for residents and increases efficiencies for business. Focusing on hard-to-recycle, single-use, and plastic items will help move BC towards a circular economy where waste and pollution are eliminated, products and materials are kept in the economy through re-use, and natural systems are regenerated. Metro Vancouver will work with the Recycling Council of British

Columbia to help share information about the upcoming changes and on the development and engagement of a sustainable food take-out packaging guide.

Solid Waste and Recycling Industry Advisory Committee

Mary Polak resigned as Co-Chair of the Solid Waste and Recycling Industry Advisory Committee on July 12, 2023. Ms. Polak will remain a member of the Industry Advisory Committee as one of two individuals representing Waste Connections of Canada. Co-Chair Craig Hodge extended his appreciation to Ms. Polak for her great work and contributions to the Industry Advisory Committee over the past year.

Nominations for the vacant second Co-Chair position are scheduled for the Industry Advisory Committee's September 12, 2023 meeting and an election will take place at the October 3, 2023 meeting.

Waste and Recycling Industry – Draft Tipping Fee Bylaw and Smart Waste Program Engagement

Engagement is being planned on both the draft Tipping Fee Bylaw Updates and implementation of the smart waste program, introduced at the July 13, 2023 Zero Waste Committee meeting. The engagement will invite feedback from solid waste and recycling industry businesses, organizations, and associations, and leverage the existing Solid Waste and Recycling Industry Advisory Committee. The engagement will provide opportunities for feedback, and serve as an opportunity to raise awareness on current generator levy requirements. Prior to implementation of the smart waste program, engagement with waste and recycling industry members will be undertaken to identify and inform opportunities to mitigate potential impacts. Implementation of the smart waste program will proceed following engagement activities scheduled for the fall.

Additionally, Metro Vancouver is sending an email to construction and demolition waste businesses to confirm that loads of construction and demolition waste delivered to private solid waste facilities are not subject to the generator levy, and the draft Tipping Fee Bylaw is being revised to clarify that construction and demolition waste loads are also exempt from record keeping requirements related to the generator levy. The email also confirms that the new smart waste program is intended to observe the movement of residential, commercial and institutional garbage around the region – not construction and demolition waste. The full email text is found in Attachment 1.

Waste-to-Energy Facility School Tour Program Expansion

A project is underway to update and expand the Waste-to-Energy Facility school tour to provide students with a real-world, experiential learning opportunity that is linked to the BC curriculum. The updated tour will help students understand Metro Vancouver's role in supporting solid waste processes, the overall solid waste system and the importance of waste reduction, recycling, and promoting a circular economy. The updated tours will be a facilitated learning experience, supported by pre- and post-visit activities, that can inspire, support and extend in-class teaching, and provide greater opportunities for inquiry-based learning. Solid Waste Services staff are collaborating with the Metro Vancouver School and Youth Leadership staff on this project. The project started with a focus group at the facility, with both elementary and secondary school teachers attending. Then the tour was refined based on teacher feedback and several school groups participated in pilots of the new tour on site this past spring. Grade 5 was identified as the strongest alignment for these concepts within the BC curriculum, and a second round of pilot tours is planned

for the fall for this grade level. The expansion to a full-scale program is anticipated in spring 2024 following further refinements including the development of a facilitation guide, and onboarding and training of a contract facilitation team.

Waste-to-Energy Facility Interpretive Features

A project to create interpretive features at the Waste-to-Energy Facility is underway to support the Waste-to-Energy Facility School Tours and improve tour experience for all types of audiences.

Groups that tour the facility include students in grades 5 – 12, elected officials, community groups, post-secondary students, and members of the solid waste and recycling industry. The interpretive features will include graphic signage that is placed on the facility equipment at specific locations and will support the tour guide's script. The signage will include prompting questions to spark tour participants to think about topics like Metro Vancouver's role in the solid waste system, waste reduction and the circular economy, environmental protection and stewardship, and the recycling hierarchy. The goal of the signage is to be able to "see what's inside" elements of the facility's equipment as most of the processes take place inside large pieces of equipment. There will also be an opportunity for tour participants to engage in hands-on activities to show the hidden processes.

This interpretive signage project is being created alongside the school tour redesign to ensure student audiences are engaged and the content aligns with the BC curriculum, while also ensuring the features are appropriate for adult audiences. Draft signage was reviewed by teachers and students as part of the school tour redesign project, and feedback from the focus groups and tour pilots will be applied to the final signage designs. Signage installation is anticipated for spring 2024.

Waste-to-Energy Non-Ferrous GHG Emission Reductions

A non-ferrous metal recovery system was installed at the Waste-to-Energy Facility in 2018 to recover non-ferrous metals such as aluminum and copper, and additional ferrous metal from bottom ash using magnetic and eddy current separation technology. Recovered metals are sold to third-party metal recycling companies. Recycled metals result in substantial greenhouse gas emission reductions by offsetting various smelting and processing operations used when making metal from virgin mined ore. The greenhouse gas reductions from the non-ferrous metal recovery system are 750 to 1050 tCO₂e/year (approximately equivalent to the emissions from 200 automobiles), or a total of approximately 3800 tCO₂e since its commissioning. Metro Vancouver's consultant has validated the calculations for 2019 and 2020, and data from 2021 and 2022 has been submitted for validation.

Zero Waste Conference

On November 1 and 2, 2023, Metro Vancouver will hold the Zero Waste Conference at the Vancouver Convention Centre. This year's conference theme is "Climate Action through Circularity". Day one is a conversation with visionaries, innovators, and change-makers who are paving the way toward a more sustainable future. Topics include textiles, plastics, food waste, and urban systems. This year's agenda draws on climate action themes and builds on previous years' programs. Day one closes with a networking reception for all participants. Day two introduces a new component, with four simultaneous workshops that take a deep dive with participants and guest hosts exploring food recovery, textiles, the circular economy, and consumer choices. Conference participants will immerse themselves in a rich blend of inspiring keynote talks, interactive workshops, and engaging sessions designed to spark meaningful conversations and transform ideas into real-world action. Any Zero Waste Committee members who have not yet

expressed interest in attending the conference should email zerowaste@metrovancover.org to confirm their attendance.

Attachments

1. Email to Construction and Demolition Waste Businesses – Draft Tipping Fee Bylaw Updates and Construction and Demolition Waste Industry
2. 2023 Work Plan

60236530

Draft Tipping Fee Bylaw Updates and Construction and Demolition Waste Industry

Dear Construction and Demolition Waste Businesses,

Draft Tipping Fee Bylaw updates related to the generator levy and a new smart waste program were introduced at the [July 13, 2023 Zero Waste Committee meeting](#) for the Committee's information (agenda items [5.4](#) and [5.5](#)). There have been questions about the applicability of the generator levy to construction and demolition waste. The purpose of this message is to provide an overview of the initiatives, and clarify that the draft Tipping Fee Bylaw updates do not affect generator levy applicability to construction and demolition waste. **Loads of construction and demolition waste delivered to private solid waste facilities (private transfer stations, material recovery facilities or landfills) are not subject to the generator levy.** Loads of construction and demolition waste are only subject to the generator levy when delivered to Regional Solid Waste Facilities (Metro Vancouver and City of Vancouver recycling and waste centres/transfer stations, the Vancouver Landfill, and the Waste-to-Energy Facility), where the generator levy is included in the tipping fee.

The smart waste program involves the use of location based electronic devices to understand the movement of residential and commercial/institutional garbage around the region – not construction and demolition waste.

What is the generator levy?

The generator levy encourages the use of Regional Solid Waste Facilities where recyclable materials are banned from disposal, and ensures all garbage generators contribute to funding the fixed cost of the Regional Solid Waste System. The generator levy is built into the garbage tipping fee at Regional Solid Waste Facilities. Waste haulers delivering garbage from residential and commercial/institutional sources to other facilities (e.g. private facilities either inside or outside of the region) are required to collect the generator levy from waste generators and remit it to Metro Vancouver. The generator levy in 2023 is set at \$59 per tonne, or roughly half the garbage tipping fee at Regional Solid Waste Facilities.

Draft Tipping Fee Bylaw Updates

Draft Tipping Fee Bylaw updates streamline definitions, and strengthen records management requirements and compliance promotion related to the generator levy.

In the current and draft updated Tipping Fee Bylaw, loads of construction and demolition waste delivered to private transfer stations, material recovery facilities or landfills are not subject to the generator levy. Only loads of construction and demolition waste delivered to Regional Solid Waste Facilities are subject to the generator levy, as the generator levy is included in the tipping fee for all materials disposed of at Regional Solid Waste Facilities including construction and demolition materials. Disposal bans also apply at Regional Solid Waste Facilities for materials such as clean wood and cardboard to help encourage recycling of those materials. The draft bylaw will be revised to clarify that construction and demolition waste loads are also exempt from record keeping requirements related to the generator levy. Under the current Tipping Fee Bylaw there is no exemption for generator levy record keeping requirements for construction and demolition waste.

Prior to presenting proposed Tipping Fee Bylaw updates to the Metro Vancouver Board for approval, Metro Vancouver will engage with the waste and recycling industry to ensure the updated definitions are complete and logical, record-keeping requirements are practical for industry, and exemptions are clear and appropriate.

Smart Waste Program

Concurrently, Metro Vancouver introduced the smart waste program, involving the use of location-based electronic devices to observe the movement of residential, commercial and institutional garbage around the region – not construction and demolition waste. Prior to implementation of the program, engagement with waste and recycling industry members will be undertaken to identify and inform opportunities to mitigate potential impacts.

In Fall 2023, Metro Vancouver will engage with the waste and recycling industry on the draft Tipping Fee Bylaw updates and smart waste program. Feel free to contact us at solidwasteoperations@metrovancover.org if you have any questions on the two initiatives or are interested in participating in the engagement.

Sincerely,

Paul Henderson, P.Eng.
General Manager
Solid Waste Services

Sign up to receive text message notifications for Metro Vancouver solid waste facilities by texting 778-655-9200 with the message JOIN, or use your phone camera to scan:



CONTACT US:

Phone: 604-432-6200

Email: solidwasteoperations@metrovancover.org



Metro Vancouver is a federation of 21 municipalities, one electoral area, and one treaty First Nation that collaboratively plans for and delivers regional-scale services. It delivers regional scale water, wastewater, and solid waste utility services. Metro Vancouver also regulates air quality, plans for urban growth, manages a regional parks system, provides affordable housing, and serves as a regional federation. The regional district is governed by a Board of Directors of elected officials from each member jurisdiction.

Copyright © 2023 Metro Vancouver. All rights reserved.
If you don't want to receive these emails in the future, you can [edit your profile](#) or [unsubscribe](#).

Zero Waste Committee 2023 Work Plan

Report Date: September 7, 2023

Priorities

1st Quarter	Status
2021 Solid Waste and Recycling Annual Report	Complete
2022 Holiday Waste Reduction Campaign Results	Complete
2022 Zero Waste Conference Report	Complete
Contingency Disposal Contract(s)	Complete
Gypsum Management in Metro Vancouver	Complete
National Zero Waste Council 2022 Accomplishments and 2023 Projects	Complete
Recycling and Waste Centre Operating Contracts	Complete
2nd Quarter	Status
2022 Disposal Ban Program Results	Complete
2022 Waste-to-Energy Facility Financial Summary	Complete
2022 Waste Composition Data	Complete
2022 – 2023 Metro Vancouver Engagement with the Love Food Hate Waste Canada Campaign	Complete
2023 Food Scraps Recycling Campaign Results	Complete
2023 Think Thrice Textiles Waste Reduction Campaign Results	Complete
Solid Waste Management Plan Update: Phase 1 Vision and Guiding Principles Workshop	Complete
Solid Waste Services Capital Program Expenditures Update as of December 31, 2022	Complete
3rd Quarter	Status
2022 Waste-to-Energy Facility Environmental Performance Summary	In progress
2023 National Zero Waste Council Projects	Pending
Recycling and Waste Centre Reuse Scale-Up	Pending
Repair Events, Programs, and Regional Food Recovery Network	Pending
Solid Waste Management Plan	Pending
Solid Waste Services Capital Program Expenditures Update as of April 30, 2023	Complete
Zero Waste Conference 2023	Pending
4th Quarter	Status
2022 Solid Waste and Recycling Annual Report	Pending
2023 Single-Use Item Reduction Campaign Results	Pending
2024-2028 Financial Plan – Solid Waste Services	Pending
2024 Tipping Fee Bylaw Revisions	Pending
Waste-to-Energy Facility District Energy System	Pending
Solid Waste Services Capital Program Expenditures Update as of August 31, 2023	Pending
North Surrey and Langley Recycling Depot Development	Pending