A G E N D A

A. ADOPTION OF THE AGENDA

1. April 4, 2024 Meeting Agenda
   That the Zero Waste Committee adopt the agenda for its meeting scheduled for April 4, 2024, as circulated.

B. ADOPTION OF THE MINUTES

1. February 8, 2024 Meeting Minutes
   That the Zero Waste Committee adopt the minutes of its meeting held February 8, 2024, as circulated.

C. DELEGATIONS

1. Glen Furtado, Senior Director, Construction Innovation with the Cement Association of Canada
   Subject: Concrete Zero: Canada’s cement and concrete industry action plan to net-zero

D. INVITED PRESENTATIONS

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

   That the GVS&DD Board direct staff to:
   a) invite feedback on the draft 2022 Integrated Solid Waste and Resource Management Plan Biennial Report from First Nations and interested parties; and

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

2. **Waste-to-Energy Facility District Energy Project Update**  
That the GVS&DD Board receive for information the report dated March 27, 2024, titled “Waste-to-Energy Facility District Energy Project Update”.

3. **Zero Waste Collaboration Initiatives – Future Delivery**  
That the Zero Waste Committee receive for information the report dated March 19, 2024, titled “Zero Waste Collaboration Initiatives – Future Delivery”.

4. **Create Memories, Not Garbage 2023 Campaign Results**  
That the Zero Waste Committee receive for information the report dated March 14, 2024, titled “Create Memories Not Garbage 2023 Campaign Results.”

5. **Appointment of Enforcement Officers and Deputy Solid Waste Manager**  
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 Michelle Jones as the deputy solid waste manager;
      ii. appoint Metro Vancouver employee Nicole MacDonald as the deputy solid waste manager;
      iii. rescind the appointment of Scott Brown as an officer; and
      iv. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald as officers; and
   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 Scott Brown; and
      ii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald.

6. **Manager’s Report**  
That the Zero Waste Committee receive for information the report dated March 21, 2024, titled “Manager’s Report.”

**F. INFORMATION ITEMS**

**G. OTHER BUSINESS**
H. RESOLUTION TO CLOSE MEETING

Note: The Committee must state by resolution the basis under section 90 of the Community Charter on which the meeting is being closed. If a member wishes to add an item, the basis must be included below.

That the Zero Waste Committee close its meeting scheduled for April 4, 2024 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:
   (k) negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public.

I. ADJOURNMENT

That the Zero Waste Committee adjourn its meeting of April 4, 2024.
Minutes of the Regular Meeting of the Metro Vancouver Regional District (MVRD) Zero Waste Committee held at 1:01 pm on Thursday, February 8, 2024 in the 28th Floor Committee Room, 4515 Central Boulevard, Burnaby, British Columbia.

MEMBERS PRESENT:
Chair, Councillor Sarah Kirby-Yung, Vancouver
Vice Chair, Craig Hodge, Coquitlam
Councillor Pietro Calendino, Burnaby
Councillor Steve Darling, Port Coquitlam
Councillor Steve Ferguson, Langley Township
Councillor Peter Fry, Vancouver
Councillor Lisa Muri, North Vancouver District
Councillor Rosemary Wallace, Langley
Councillor Paul Weverink, Anmore

MEMBERS ABSENT:
None.

OTHERS PRESENT:
Brianne De Man, Manager of Charitable Programs, Binners’ Project
Mary-Em Waddington, Executive Director, BC Technology for Learning Society

STAFF PRESENT:
Paul Henderson, General Manager, Solid Waste Services
Rapinder Khaira, Legislative Services Coordinator, Board and Information Services
Lucy Duso, Division Manager, External Relations

A. ADOPTION OF THE AGENDA

1. February 8, 2024 Meeting Agenda

It was MOVED and SECONDED
That the Zero Waste Committee adopt the agenda for its meeting scheduled for February 8, 2024 as circulated.

CARRIED
B. ADOPTION OF THE MINUTES

1. January 11, 2024 Meeting Minutes

   It was MOVED and SECONDED
   That the Zero Waste Committee adopt the minutes of its meeting held
   January 11, 2024 as circulated.

   CARRIED

C. DELEGATIONS

1. Mary-Em Waddington, Executive Director, BC Technology for Learning Society
   Mary-Em Waddington, Executive Director, BC Technology for Learning Society, recognized Metro Vancouver’s contribution to the Computers for Schools Plus Program and shared the Computer for Schools Plus Program Award with the Zero Waste Committee. She noted that the BC Technology for Learning Society mandate of reuse aligns with the committees’ goals. She encouraged any municipality not participating to contact them.

   Request of Staff
   Staff was requested to provide information to Zero Waste Committee members as well as municipal staff on how to participate in the Computers for Schools Plus Program

D. INVITED PRESENTATIONS

1. Brianne De Man, Manager of Charitable Programs, Binners’ Project
   Brianne De Man, Manager of Charitable Programs, Binners’ Project, provided a presentation titled “Coffee Cup Revolution”, with an overview of the Binner’s Project Coffee Cup Revolution, 2023 project milestones, and highlighted Metro Vancouver’s contribution to the project.

   Discussion ensued regarding:
   • possibility of funding for the Coffee Cup Revolution from coffee cup producers,
   • recycling options for large disposals of plastic cups, and
   • campaign opportunities to raise awareness on coffee cup recycling.

E. REPORTS FROM COMMITTEE OR CHIEF ADMINISTRATIVE OFFICER

1. Zero Waste Conference 2023
   Report dated February 1, 2024, from Sandra Jansen, General Manager, External Relations, and Lucy Duso, Division Manager, External Relations, providing the Zero Waste Committee with a summary of the Zero Waste Conference, hosted by Metro Vancouver in November 2023, and a look ahead to future conference delivery.
It was MOVED and SECONDED
That the Zero Waste Committee receive for information the report dated February 1, 2024, titled “Zero Waste Conference 2023”.

CARRIED

2. Manager’s Report
Report dated February 1, 2024, from Paul Henderson, General Manager, Solid Waste Services, providing the Zero Waste Committee with an update on the 2024 Zero Waste Work Plan, which will include updates to the Tipping Fee Bylaw coupled with a new smart waste program, and the 2024 Textiles Waste Reduction Campaign, and the Right to Repair movement.

It was MOVED and SECONDED
That the Zero Waste Committee receive for information the report dated February 1, 2024, titled “Manager’s Report.

CARRIED

F. INFORMATION ITEMS
No items presented.

G. OTHER BUSINESS
No items presented.

H. RESOLUTION TO CLOSE MEETING
No items presented.

I. ADJOURNMENT

It was MOVED and SECONDED
That the Zero Waste Committee adjourn its meeting of February 8, 2024.

CARRIED
(Time: 1:39 pm)

Rapinder Khaira, Legislative Services Coordinator
Sarah Kirby-Yung, Chair

65883882 FINAL
Concrete Zero: Canada’s cement and concrete industry action plan to net-zero.

Information on Concrete Zero may be accessed through the following URLs:

https://cement.ca/sustainability/concrete-zero/


The Cement Association of Canada (CAC) is the voice of Canada’s cement industry. Last year, the CAC released Concrete Zero, laying out the steps that that cement industry and its partners in the concrete sector are planning to take to help Canada achieve its net-zero carbon goals.

Concrete is a versatile, durable, water and fire-resistant, cost-effective, and resilient building material that is essential for housing and infrastructure. It is fundamental to the delivery of critical water and sewer utility services that are central to the diverse roles of Metro Vancouver.

The industry has already begun its transition to lower-carbon fuel sources, carbon-reduced cements, and clean technologies. Cement-based materials—including ready mixed, precast and masonry concrete—have also been implementing carbon reductions in their product composition and manufacturing processes. And the industry has been on the leading edge of transparently disclosing and verifying carbon reductions through Environmental Product Declarations or EPDs. Our Action Plan lays the foundation for what we will do next and our role in delivering solutions to climate change.

Concrete Zero establishes goals of reducing emissions (from a 2020 baseline) by 40% by 2030 and to reach net-zero by 2050. To succeed in our Action Plan, collaboration is essential. As part of the Action Plan, we intend to continue to work and collaborate with Metro Vancouver and other governments across the region and the country, members of the procurement, architecture, engineering and design community, and the construction sector to realize these goals.

Our presentation to the Zero Waste Committee will provide details on Concrete Zero and highlight key tools developed by industry that align with the priorities outlined in Metro Vancouver’s Board Strategic plan including Climate Action and Resilient Services and Infrastructure and help illuminate how Metro Vancouver and the cement and concrete sector can continue collaboration on shared priorities.

For more information, please contact Glen Furtado, M.A.Sc., P.Eng., Senior Director, Construction Innovation with the Cement Association of Canada at gfurtado@cement.ca
To: Zero Waste Committee
From: Terry Fulton, Senior Project Engineer, Solid Waste Services
Date: March 20, 2024
Meeting Date: April 4, 2024

RECOMMENDATION
That the GVS&DD Board direct staff to:
a) invite feedback on the draft 2022 Integrated Solid Waste and Resource Management Plan Biennial Report from First Nations and interested parties; and

EXECUTIVE SUMMARY

Metro Vancouver is a North American leader in waste reduction and recycling, with a regional recycling rate of 65% and a per capita disposal rate of 0.44 tonnes (440 kg) per year: a 23% reduction since the current solid waste management plan was approved in 2011. The source of the majority of waste generated in 2022 continued to shift from the residential sector to the commercial/institutional sector, but decreased overall. The overall recycling rate matches the 2021 rate. Metro Vancouver's is updating the regional solid waste management plan with the goal of identifying and implementing new strategies and actions to continue reducing waste and increasing recycling.

PURPOSE
The purpose of this report is to provide the GVS&DD Board (Board) with the draft 2022 Biennial Report on progress of the implementation of the Integrated Solid Waste and Resource Management Plan.

BACKGROUND
Under the provincial Environmental Management Act, regional districts must prepare solid waste plans outlining the facilities, regulations, programs and other initiatives that will be used to reduce, reuse, recycle, and dispose of municipal solid waste. Metro Vancouver’s current Integrated Solid Waste and Resource Management Plan was approved by the Minister of Environment on July 22, 2011. A condition of the Integrated Solid Waste and Resource Management Plan approval was that Metro Vancouver provide a progress report on the implementation of the plan to the Ministry of Environment and Climate Change Strategy every two years.
2022 INTEGRATED SOLID WASTE AND RESOURCE MANAGEMENT PLAN BIENNIAL REPORT

The biennial report typically includes a summary of strategies, performance measures and progress on the detailed actions in the plan, and supplements a separate annual summary of recycling and solid waste management statistics. For 2022, the annual recycling and solid waste management report has been combined with the biennial report to provide all solid waste management plan performance information in one place. Going forward, Metro Vancouver will alternate biennial reports with solid waste management annual summary reports. This may be revisited when an updated solid waste management plan is approved.

2021 and 2022 Highlights

Metro Vancouver is among the most successful jurisdictions in North America in reducing municipal solid waste, having met a goal of reducing per capita waste generation by 10%, recycling 65% of waste generated, and disposing of 0.44 tonnes per capita in 2022 (a 23% reduction since the current solid waste management plan was approved in 2011). The following initiatives undertaken since the prior biennial progress report have helped to further the goals of the Integrated Solid Waste and Resource Management Plan while reflecting the public's expectations of environmental stewardship, affordability, and accessibility.

• **Solid waste management plan update:** Metro Vancouver convened two advisory committees which continue to shape the ongoing solid waste management plan update: the Solid Waste and Recycling Industry Advisory Committee, and the Solid Waste Management Plan Public/Technical Advisory Committee. Both committees provide valuable input on both the solid waste management plan update and ongoing waste reduction initiatives.

• **Waste prevention and re-use:** Metro Vancouver prioritized initiatives to prevent waste in 2021 and 2022, including contracting with FoodMesh to develop a regional food recovery network to help rescue and redistribute surplus food, developing a funding program for member jurisdictions to host repair café events, and piloting 'Reuse Days' at the North Shore Recycling and Waste Centre to collect items from customers that can be reused. The National Zero Waste Council, an initiative of Metro Vancouver, works on a national scale to lead Canada’s transition to a circular economy. In 2021 and 2022, the National Zero Waste Council worked with governments, businesses and NGOs to further understand and explore solutions to food waste, plastics pollution, product design and packaging, construction and demolition, and reuse.

• **Recycling and waste centres:** United Boulevard and Central Surrey recycling and waste centres opened to the public in 2022. These facilities demonstrate Metro Vancouver’s commitment to maximizing waste reduction and recycling, and providing excellent customer service. Both facilities include recycling depots where a wide range of recyclable materials can be dropped off for free.

In late 2022, Metro Vancouver initiated recycling depot development projects at the Langley and North Surrey recycling and waste centres. Metro Vancouver purchased land
adjacent to the North Surrey Recycling and Waste Centre in December 2022, to be developed into the recycling depot, which is critical to achieving Metro Vancouver’s goal of providing consistent services that maximize reuse and recycling opportunities at all Metro Vancouver recycling and waste centres.

- **Waste-to-Energy Facility District Energy System**: Metro Vancouver entered into an agreement with River District Energy to provide district energy for heat and hot water for that community in December 2021. The approximately 6 km hot water pipe network that will connect the Waste-to-Energy Facility to the River District community is in the detailed design stage. The next phase of the project will involve connecting to a City of Burnaby district energy system serving Metrotown and Edmonds neighbourhoods. At full build out, the system will triple the energy efficiency of the Waste-to-Energy Facility, provide heat and hot water for up to 50,000 homes and reduce greenhouse gas emissions by up to 70,000 tonnes per year.

### Annual Summary Statistics

The table below provides a summary of waste disposed, recycled, and generated, by sector. The full 2022 Biennial Report is available online on the Metro Vancouver [website](http://www.metrovancouver.org).

<table>
<thead>
<tr>
<th>WASTE SECTOR</th>
<th>DISPOSED (tonnes)</th>
<th>RECYCLED (tonnes)</th>
<th>GENERATED (tonnes)</th>
<th>RECYCLING RATE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2021</td>
<td>2022</td>
<td>2021</td>
<td>2022</td>
</tr>
<tr>
<td>Residential</td>
<td>tonnes</td>
<td>510,337</td>
<td>505,592</td>
<td>601,509</td>
</tr>
<tr>
<td></td>
<td>tonnes/capita</td>
<td>0.18</td>
<td>0.18</td>
<td>0.21</td>
</tr>
<tr>
<td>Single Family</td>
<td>tonnes</td>
<td>266,999</td>
<td>248,750</td>
<td>455,723</td>
</tr>
<tr>
<td></td>
<td>tonnes/capita</td>
<td>0.18</td>
<td>0.18</td>
<td>0.21</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>tonnes</td>
<td>243,337</td>
<td>256,842</td>
<td>145,786</td>
</tr>
<tr>
<td></td>
<td>tonnes/capita</td>
<td>0.13</td>
<td>0.14</td>
<td>0.11</td>
</tr>
<tr>
<td>Commercial/</td>
<td>tonnes</td>
<td>372,861</td>
<td>400,976</td>
<td>316,406</td>
</tr>
<tr>
<td>Institutional</td>
<td>tonnes/capita</td>
<td>0.13</td>
<td>0.14</td>
<td>0.11</td>
</tr>
<tr>
<td>Construction and</td>
<td>tonnes</td>
<td>371,972</td>
<td>338,955</td>
<td>1,433,933</td>
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<tr>
<td>Demolition</td>
<td>tonnes/capita</td>
<td>0.13</td>
<td>0.12</td>
<td>0.51</td>
</tr>
<tr>
<td>Total</td>
<td>tonnes</td>
<td>1,255,169</td>
<td>1,245,523</td>
<td>2,351,848</td>
</tr>
</tbody>
</table>

Note: Due to rounding, some numbers presented may not add precisely to the totals indicated

### Waste Reduction

The *Integrated Solid Waste and Resource Management Plan* quantifies waste reduction by estimating the change in waste generation over time. Waste generated is the total of the waste disposed and recycled in the region. The total waste generated in 2022 was approximately 3.60 million tonnes or 1.26 tonnes per capita, a 2% decrease in per capita generation from 2021, primarily due to a decrease in construction and demolition waste generation.
Reuse
In 2017, Metro Vancouver added the reuse metric, which is an estimate of the amount of material reused rather than recycled or disposed. The data used to estimate reuse is sourced from registered charities’ financial statements, producer responsibility organization annual reports, statistical information, reuse program web pages, and communication with key organizations in the second-hand clothing industry, hospitality sector, food rescue agencies, online marketplace, etc. Overall, reuse in 2022 increased to 78,500 tonnes from 77,600 tonnes in 2021. Reuse tonnage is reported separately from the generation rate and recycling rate calculations, and the methodology used to estimate reuse continues to be refined as more information becomes available. Metro Vancouver is looking into improved ways to quantify reuse as part of an ongoing solid waste performance metrics review.

Recycling
In 2022, the region achieved a recycling rate of 65% and recycled approximately 2.35 million tonnes (0.82 tonnes per capita), compared to 2.35 million tonnes (0.84 tonnes per capita) in 2021. Materials with the highest recycling quantities were concrete, yard and food waste, and paper. Overall recycling in the commercial/institutional sector increased by 59,060 tonnes, while the residential sector experienced a decrease of 21,755 tonnes in recycled material between 2021 and 2022. The most notable change was in the yard and food waste categories, correlating with a continued return to in-person work and learning.

The table below summarizes the total recycled material quantities for 2022 compared to 2021. Additional materials and quantities are included in the detailed annual summary report on Metro Vancouver’s website. Metro Vancouver reports two recycling rates for the construction and demolition sector in the biennial report: one with all materials included, and one excluding concrete and asphalt. This helps demonstrate that there is continued opportunity for improvement in this sector, with a significant quantity of recyclable materials such as wood still remaining in the waste stream. Asphalt and concrete quantities were kept fixed from 2021 to 2022 due to large increases in quantities reported from unlicensed processing facilities without clear explanation for the increases. Metro Vancouver continues to work to ensure the reliability of this data.

<table>
<thead>
<tr>
<th>MATERIAL TYPE RECYCLED</th>
<th>2021 (tonnes)</th>
<th>2022 (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt(^1)</td>
<td>295,300</td>
<td>295,300</td>
</tr>
<tr>
<td>Concrete(^1)</td>
<td>866,363</td>
<td>866,363</td>
</tr>
<tr>
<td>Paper</td>
<td>328,065</td>
<td>340,386</td>
</tr>
<tr>
<td>Glass</td>
<td>49,786</td>
<td>55,582</td>
</tr>
<tr>
<td>Gypsum</td>
<td>63,533</td>
<td>58,512</td>
</tr>
<tr>
<td>Metal</td>
<td>73,369</td>
<td>58,515</td>
</tr>
<tr>
<td>Plastic</td>
<td>43,849</td>
<td>54,037</td>
</tr>
<tr>
<td>Wood</td>
<td>161,309</td>
<td>161,242</td>
</tr>
<tr>
<td>Yard and Food</td>
<td>401,890</td>
<td>392,044</td>
</tr>
<tr>
<td>All Other Materials</td>
<td>68,384</td>
<td>68,598</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,351,848</strong></td>
<td><strong>2,350,580</strong></td>
</tr>
</tbody>
</table>

\(^1\) Unlicensed private facility data from 2021 used
Disposal
For 2021 to 2022 the Vancouver Landfill, Metro Vancouver Waste-to-Energy Facility, and three remote landfills under contract with Metro Vancouver accepted municipal solid waste from residential and commercial/institutional sources. Construction and demolition waste is disposed of at the Vancouver Landfill and private facilities. In 2022, an estimated 1.25 million tonnes of waste or 0.44 tonnes per capita was disposed, which is a 2.4% decrease in tonnage per capita from 2021, and 23% decrease from the per capita disposal rate when the current solid waste management plan was approved in 2011. The region continued to experience an increase in waste disposed by commercial and institutional sources, while waste disposed from the residential and construction and demolition sectors decreased. This trend was first noted during economic recovery from the COVID-19 pandemic in 2021.

Continuous Improvement
Metro Vancouver continues to seek ways to improve how solid waste data is shared. Feedback from the vision and guiding principles phase of Metro Vancouver’s solid waste management plan update indicated accessibility and transparency as key priorities.

A performance metrics review is currently underway to assess Metro Vancouver’s current data acquisition and reporting processes, and identify information or metrics from other jurisdictions that may help quantify progress toward circular economy and waste prevention goals.

Engagement
Solid waste and recycling statistics from the draft 2022 Biennial Report were presented to the Solid Waste Management Plan Public/Technical Advisory Committee, the Solid Waste and Recycling Industry Advisory Committee, and the Regional Engineers Advisory Committee Solid Waste Subcommittee in February and March 2024 for feedback. Metro Vancouver received feedback related to the treatment of landfill cover materials in Metro Vancouver’s reporting. Cover materials including 91,000 tonnes of shredded wood waste from construction and demolition material are not included in Metro Vancouver’s recycling calculations as they are inconsistently reported in other jurisdictions, and no clear guidance on their inclusion exists. If shredded wood waste used as landfill cover was counted as recycling (given it replaces other potentially purchased cover materials), the overall recycling rate for the region would increase by about 1%.

Questions were also asked related to the use of the terms “waste diversion” compared to “recycling”. The report explains that Metro Vancouver has stopped using the term “waste diversion” given the lack of clarity with respect to the term, and now uses “recycling” and “recycling rate” as these terms link to the Environmental Management Act definition of “recyclable materials”.

The draft 2022 Biennial Report will be sent to First Nations and a database of interested parties after the April 4, 2024 Zero Waste Committee agenda is published, including member jurisdictions, waste management and recycling industry representatives, businesses and institutions, non-governmental organizations and government agencies. Any feedback received will be included with the Biennial Report submission to the Ministry of Environment and Climate Change Strategy. Feedback will also be summarized and reported to the Zero Waste Committee.
ALTERNATIVES
1. That the GVS&DD Board direct staff to:
   a) invite feedback on the draft 2022 Integrated Solid Waste and Resource Management Plan Biennial Report from First Nations and interested parties; and

2. That the Zero Waste Committee direct staff to revise the draft 2022 Integrated Solid Waste and Resource Management Plan Biennial Report prior to its submission to the Ministry of Environment and Climate Change Strategy.

FINANCIAL IMPLICATIONS
Metro Vancouver’s waste reduction and diversion initiatives are implemented within the annual budgets for the Solid Waste Services department.

CONCLUSION
The 2022 Biennial Report is a progress report on the implementation of the existing Integrated Solid Waste and Resource Management Plan, as required by the province. The report includes statistics on the region’s waste diversion and disposal performance, along with descriptions of the status of the individual initiatives outlined in the plan. Metro Vancouver is among the most successful jurisdictions in North America at waste reduction, and intends to continue building upon that success with an updated solid waste management plan. If the Board approves Alternative 1, the draft Biennial Report will be sent to First Nations and interested parties prior to submission to the Ministry of Environment and Climate Change Strategy along with any feedback received.

REFERENCES

ATTACHMENT

65796283
2022 Biennial Report
INTEGRATED SOLID WASTE AND RESOURCE MANAGEMENT PLAN PROGRESS

Terry Fulton, P.Eng
Senior Project Engineer, Solid Waste Services
Zero Waste Committee, April 4, 2024

2022 BIENNIAL REPORT OVERVIEW

• Summarizes 2021 and 2022 highlights
• Reports on status of each action within the solid waste management plan
• Provides updated solid waste and recycling statistics
2022 HIGHLIGHTS

- Solid waste management plan update
- Waste prevention, reduction and reuse initiatives
- New recycling and waste centres
- District energy project

GUIDING POLICY & TARGETS

2011 Solid Waste Management Plan

Goal: 10% Reduction Waste Generation (Achieved 11%)
Generation = Recycled + Disposed

Goal: 80% Recycling Rate (Achieved 65%)
Recycling Rate = Recycled / Generated
RECYCLING RATE

- **Recycled**
  - 2,350,580 tonnes
- **Landfill and Waste to Energy**
  - 1,245,522 tonnes

2022 Disposal Quantities

<table>
<thead>
<tr>
<th>Facility / Sector</th>
<th>Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vancouver Landfill*</td>
<td>691,000</td>
</tr>
<tr>
<td>Waste-to-Energy Facility*</td>
<td>219,000</td>
</tr>
<tr>
<td>Contingency Disposal</td>
<td>145,000</td>
</tr>
<tr>
<td>Private Landfill Construction &amp; Demolition Disposal</td>
<td>190,000</td>
</tr>
<tr>
<td>Residential</td>
<td>506,000</td>
</tr>
<tr>
<td>Commercial/Institutional</td>
<td>401,000</td>
</tr>
<tr>
<td>Construction and Demolition</td>
<td>339,000</td>
</tr>
</tbody>
</table>

*In addition to municipal solid waste, disposal facilities also received approximately 56,000 tonnes of treatment plant residuals, Japanese beetle soil, and out-of-region material.*

RECYCLING

<table>
<thead>
<tr>
<th>Materials Type Recycled (tonnes)</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt*</td>
<td>295,300</td>
<td>295,300</td>
</tr>
<tr>
<td>Batteries</td>
<td>13,858</td>
<td>13,838</td>
</tr>
<tr>
<td>Concrete*</td>
<td>866,363</td>
<td>866,363</td>
</tr>
<tr>
<td>Electronic &amp; Electrical Equipment</td>
<td>11,213</td>
<td>10,812</td>
</tr>
<tr>
<td>Paper/Paper Products</td>
<td>328,065</td>
<td>340,386</td>
</tr>
<tr>
<td>Glass</td>
<td>49,786</td>
<td>55,585</td>
</tr>
<tr>
<td>Gypsum</td>
<td>63,533</td>
<td>58,512</td>
</tr>
<tr>
<td>Household Hazardous Waste</td>
<td>21,292</td>
<td>24,339</td>
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<tr>
<td>Metal</td>
<td>73,369</td>
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<tr>
<td>Plastic</td>
<td>43,849</td>
<td>54,927</td>
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<tr>
<td>Textiles</td>
<td>691</td>
<td>372</td>
</tr>
<tr>
<td>Tires</td>
<td>21,328</td>
<td>19,237</td>
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<tr>
<td>Wood</td>
<td>161,309</td>
<td>161,242</td>
</tr>
<tr>
<td>Yard &amp; Food</td>
<td>401,890</td>
<td>392,044</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,351,848</td>
<td>2,350,580</td>
</tr>
</tbody>
</table>

2022 Recycling Highlights

- Recovery in glass recycling following facility closures in 2021 due to flooding
- Increase paper and plastics recycling
- Used asphalt and concrete numbers from 2021 due to large unverified increases from unlicensed facilities

*Used previous year’s data*
RECYCLING RATE OVER TIME
From all sectors

GENERATION & RECYCLING OVER TIME
From all sectors
### 2022 SUMMARY

<table>
<thead>
<tr>
<th>WASTE SECTOR</th>
<th>DISPOSED (tonnes)</th>
<th>RECYCLED (tonnes)</th>
<th>RECYCLING RATE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2021</td>
<td>2022</td>
<td>2021</td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tonnes</td>
<td>510,337</td>
<td>505,592</td>
<td>601,509</td>
</tr>
<tr>
<td>Tonnes/capita</td>
<td>0.182</td>
<td>0.177</td>
<td>0.21</td>
</tr>
<tr>
<td>Single Family Tonnes</td>
<td>266,999</td>
<td>248,750</td>
<td>455,723</td>
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<tr>
<td>Multi-Family Tonnes</td>
<td>243,337</td>
<td>256,842</td>
<td>145,786</td>
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<tr>
<td>Commercial/Institutional</td>
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<td></td>
<td></td>
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<tr>
<td>Tonnes</td>
<td>372,861</td>
<td>400,976</td>
<td>316,406</td>
</tr>
<tr>
<td>Tonnes/capita</td>
<td>0.13</td>
<td>0.14</td>
<td>0.11</td>
</tr>
<tr>
<td>Construction &amp; Demolition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tonnes</td>
<td>371,972</td>
<td>338,955</td>
<td>1,433,933</td>
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<tr>
<td>Total</td>
<td>1,255,169</td>
<td>1,245,523</td>
<td>2,351,848</td>
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<tr>
<td>Tonnes/capita</td>
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<td>0.44</td>
<td>0.84</td>
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<tr>
<td>Tonnes/household</td>
<td>1.15</td>
<td>1.11</td>
<td>2.15</td>
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#### REUSE ESTIMATE

<table>
<thead>
<tr>
<th>Material Category</th>
<th>2021 Annual Reuse (tonnes)</th>
<th>2022 Annual Reuse (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textiles and Accessories</td>
<td>17,400</td>
<td>17,400</td>
</tr>
<tr>
<td>EPR Programs</td>
<td>17,300</td>
<td>18,000</td>
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<tr>
<td>Food</td>
<td>7,300</td>
<td>7,000</td>
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<tr>
<td>Hotels and Hospitality Sector</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Office Furniture</td>
<td>1,400</td>
<td>1,400</td>
</tr>
<tr>
<td>IT Equipment</td>
<td>1,600</td>
<td>1,600</td>
</tr>
<tr>
<td>Construction/ Demolition Materials</td>
<td>4,800</td>
<td>4,900</td>
</tr>
<tr>
<td>On-Line for Selected Materials</td>
<td>27,400</td>
<td>27,800</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>77,600</strong></td>
<td><strong>78,500</strong></td>
</tr>
</tbody>
</table>

#### 2022 Reuse Highlights

- Slight increase in online reuse, however limited ability to track
- Overall similar to 2021
- Looking at ways to improve measurement with performance metrics review
To: Zero Waste Committee

From: Sarah Wellman, Senior Engineer, Solid Waste Services

Date: March 27, 2024

Meeting Date: April 4, 2024

Subject: Waste-to-Energy Facility District Energy System Project Update

RECOMMENDATION
That the GVS&DD Board receive for information the report dated March 27, 2024, titled “Waste-to-Energy Facility District Energy Project Update.”

EXECUTIVE SUMMARY
Detailed design work is progressing for Phase 1 of the Waste-to-Energy Facility District Energy System. Phase 1 includes an energy centre and a hot water piping network to the River District community. The route for the hot water piping system to River District has been selected. The energy centre will be developed within the street allowance immediately adjacent to the Waste-to-Energy Facility. The energy centre will include an education centre and public amenities in addition to the equipment required to convert steam to hot water and pump the hot water to energy users. Planning for the Phase 2 connection to the Burnaby District Energy Utility at Metrotown and Edmonds is underway. Engagement with the City of Burnaby, the City of Vancouver, First Nations, and the public will continue as the design process proceeds. The district energy service will be provided through Greater Vancouver Sewerage and Drainage District (GVS&DD), and as such, an application for a British Columbia Utilities Commission exemption is being submitted.

Figure 1: Waste-to-Energy District Energy Project – Phase 1 Piping Route and Phase 2 Expansion
PURPOSE
The purpose of this report is to provide the Zero Waste Committee and GVS&DD Board with an update on the status of the Waste-to-Energy Facility District Energy System project.

BACKGROUND
On October 27, 2023, the GVS&DD and MVRD Boards approved advancing to detailed design of Phase 1 of the Waste-to-Energy Facility District Energy System including an energy centre at the Waste-to-Energy Facility and hot water piping connecting to the River District community. The Boards approved advancing to concept design for the Phase 2 connecting to a future City of Burnaby District Energy System at Metrotown and Edmonds. This report provides an update on the hot water pipe routing, the energy centre, and the district energy service delivery model.

WASTE-TO-ENERGY FACILITY DISTRICT ENERGY SYSTEM PROJECT
The Waste-to-Energy Facility District Energy System provides an opportunity to triple the energy recovery efficiency of the Waste-to-Energy Facility, by providing heat and hot water for up to 50,000 homes and reducing greenhouse gas emissions by up to 70,000 tonnes per year.

The Waste-to-Energy Facility recovers energy from the combustion of garbage through the hot water and steam that circulates through the Waste-to-Energy Facility. District energy involves using some of the steam to heat water that is delivered through an underground hot water piping network to nearby developments. Phase 1 of the Waste-to-Energy Facility District Energy System includes building an energy centre adjacent to the Waste-to-Energy Facility as well as a hot water pipe network from the Waste-to-Energy Facility to the River District Energy system located immediately west of Boundary Road at Marine Way in Vancouver. Phase 2 of the Waste-to-Energy Facility District Energy System involves extending the hot water pipe from the Phase 1 infrastructure to Metrotown and Edmonds where the City of Burnaby is developing a district energy utility.

Pipe Route
Metro Vancouver is engaging with the City of Burnaby, the City of Vancouver, and First Nations. The route of the Phase 1 hot water piping from the Waste-to-Energy Facility to the River District community has been selected (Figure 2). Considerations for route options included factors such as traffic management, environmental considerations and existing utilities, along with minimizing pipe length.
Energy Centre and Engagement
Metro Vancouver has been working closely with the City of Burnaby regarding design of an energy centre that will be located within the street allowance immediately adjacent to the Waste-to-Energy Facility. The energy centre will convert steam from the Waste-to-Energy Facility to hot water and will include pumps to move the hot water through the hot water piping to River District.

Metro Vancouver is working with the City of Burnaby to begin the design of the energy centre. An education centre is planned to be included in the new building to replace a temporary education centre within the Waste-to-Energy Facility site. The education centre would be used by Metro Vancouver to host school groups and others interested in waste reduction and recycling, and Metro Vancouver’s overall solid waste system including the Waste-to-Energy Facility. The space would also be made available to the City of Burnaby for parks programming purposes. Other amenities that will be considered include public electric vehicle charging stations and public washrooms.

The design process for the energy centre will integrate features that help describe the role of the energy centre and the Waste-to-Energy Facility as well as overall waste reduction actions. Metro Vancouver will engage with City of Burnaby staff, First Nations, and the public on energy centre design development and construction, as well as district energy pipe construction.

Connection to Burnaby District Energy System
Phase 2 of the Waste-to-Energy Facility District Energy System involves extending the hot water pipe network to a Burnaby District Energy Utility at Metrotown and Edmonds (Figure 3). Current work involves confirming sizing for the energy centre and Phase 1 pipe elements to support extension to Metrotown and Edmonds, as well as identifying tie-in points for Phase 2 piping.
District Energy Service and Regulatory Matters

GVS&DD owns and operates the Waste-to-Energy Facility, and would be regulated by the British Columbia Utilities Commission as a public utility providing a district energy service, unless an exemption from regulation is obtained. Because MVRD, a regional district, is expressly excluded from the definition of “public utility” under the Utilities Commission Act, the initial intent was to establish a new MVRD district energy service, and an agreement between GVS&DD and MVRD. Investigations have concluded that the GVS&DD providing the district energy service is the most appropriate approach. Under this model, an application for an exemption from British Columbia Utilities Commission is required. The GVS&DD is applying to the British Columbia Utilities Commission for an exemption from Part 3 of the Utilities Commission Act for the Waste-to-Energy Facility District Energy System. GVS&DD has previously applied for and been granted exemptions from Part 3 of the Utilities Commission Act for other heat recovery projects.

Schedule

The October 2023 GVS&DD and MVRD Board report projected service to River District by 2026 and Burnaby by 2030. Ongoing work on a number of agreements, permitting and regulatory processes, and procurement processes may affect the project schedule. Schedule updates will be communicated to the Board as part of future updates on the project.
ALTERNATIVES
This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS
Per the 2024 Budget and 2024-2028 Financial Plan, the approved capital budget for the Phase 1 system development to River District is $84 million. The Phase 2 connection to City of Burnaby’s system has a total estimated cost of $123 million, but has not yet been approved, for a total estimated cost for the Waste-to-Energy Facility District Energy System project of $207 million. All of the Phase 1 costs have been included in the 2024-2028 Financial Plan and initial Phase 2 expenditures of $50M are included in the 2024-2028 Financial Plan with the remainder of the costs to be allocated in subsequent years. Table 1 provides a breakdown of project costs.

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Approved Budget ($millions)</th>
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</thead>
<tbody>
<tr>
<td>Engineering and Construction</td>
<td>127</td>
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<tr>
<td>Escalation</td>
<td>19</td>
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<tr>
<td>Risk Reserve</td>
<td>61</td>
</tr>
<tr>
<td>Total (Phase 1: $84 M; Phase 2: $123 M)</td>
<td>207</td>
</tr>
</tbody>
</table>

Table 1: Project Cost

The projected cash flow for Phase 1 and Phase 2 of the project in the 2024-2028 Financial Plan is $133 million, with $12.5M expected to be spent in 2024. These amounts are funded primarily from borrowing and will be recovered through energy sales over time. Cash flow updates for the district energy project along with other solid waste capital projects will be included in Financial Performance Reporting reports scheduled for later in 2024. The project is expected to be cost neutral over its life with energy sales revenues funding capital and operating expenditures. Table 2 provides the cash flows and funding sources in the 2024-2028 Financial Plan.

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
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<td>17.5</td>
<td>16</td>
<td>37</td>
<td>-</td>
<td>83</td>
</tr>
<tr>
<td>WTE Phase 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>50</td>
<td>50</td>
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<td>Total</td>
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<td>18</td>
<td>16</td>
<td>37</td>
<td>50</td>
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<table>
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<tr>
<th>Funding Summary</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2024-2028</th>
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<td>External Borrowing</td>
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<td>17</td>
<td>15</td>
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<td>Reserves</td>
<td>0.5</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>12.5</td>
<td>18</td>
<td>16</td>
<td>37</td>
<td>50</td>
<td>133</td>
</tr>
</tbody>
</table>

Table 2: Cash Flows and Funding Sources ($millions)

Funding for the planned solid waste education centre, along with public amenities to be incorporated into the energy centre, will be included as part of the Solid Waste Capital Budget to be brought forward for consideration to the Zero Waste Committee and Board in October 2024.
CONCLUSION
In October 2023, the Board approved proceeding to detailed design for Phase 1 of the Waste-to-Energy Facility District Energy System. This report updates the Zero Waste Committee on various aspects of the project progress. Future updates will be provided as the project continues to advance.

ATTACHMENTS
1. Presentation re: Waste-to-Energy District Energy System Project Update

65389357
Waste-to-Energy Facility District Energy System

PROJECT UPDATE

Sarah Wellman
Senior Engineer
Zero Waste Committee, April 4, 2024
0601: 665-5343

Nathan Jamieson
Senior Project Engineer

WASTE-TO-ENERGY FACILITY
District Energy System

Opportunity to triple the energy recovery efficiency of the Waste-to-Energy Facility

• Heat and hot water for up to 50,000 homes
• Reduction of greenhouse gas emissions by up to 70,000 tonnes per year
• Capital costs recovered through energy sales over the life of the infrastructure
PHASE 1
Construction from 2025 to 2027

- Construction of 6km hot water piping between the Waste-to-Energy Facility and River District
- Design and construction of the energy centre adjacent to the Waste-to-Energy Facility

ENERGY CENTRE DESIGN

Primary function of the energy centre is to convert steam to hot water.
It is also being designed to include:
- an educational space
- amenities such as public washrooms, electric vehicle charging
- features that describe the solid waste system including the Waste-to-Energy Facility, and waste reduction and recycling

Multi-Purpose Room, Watershed Centre, Lower Seymour Conservation Reserve
DISTRICT ENERGY SYSTEM PHASES

- Phase 1 Piping route has been selected
- Piping and energy centre will be sized to support future expansion
- Phase 2 expansion to Metrotown and Edmonds – route to be determined

WASTE-TO-ENERGY FACILITY DISTRICT ENERGY SYSTEM

British Columbia Utilities Commission Exemption

- GVS&DD will be applying to the BC Utilities Commission for an exemption from Part 3 of the Utilities Commission Act
- GVS&DD has previously applied for and been granted exemptions for other heat recovery projects
To: Zero Waste Committee

From: Lucy Duso, Division Manager Collaboration and Stakeholder Engagement, External Relations

Date: March 19, 2024

Subject: Zero Waste Collaboration Initiatives – Future Delivery

RECOMMENDATION
That the Zero Waste Committee receive for information the report dated March 19, 2024 titled “Zero Waste Collaboration Initiatives – Future Delivery”.

EXECUTIVE SUMMARY
The Zero Waste Collaboration Initiatives are a program developed by Metro Vancouver over 2011/2012 to support success in the waste prevention goals of the Integrated Solid Waste and Resource Management Plan. Waste prevention continues to be a priority for Metro Vancouver, and the Zero Waste Collaboration Initiatives continue to deliver on the scale of collaboration and cross-sector dialogue required to prevent waste before it becomes an end product for local governments to manage.

In late 2023, staff reviewed and analyzed program delivery, including seeking input from external delivery partners and allies in waste prevention from across Canada. As a result, staff will continue to deliver the Zero Waste Initiatives with a recalibration of that delivery. The outcome is a program that aligns with other organizations in the waste prevention space, and delivers on work plans that fit the niche role of the National Zero Waste Council in the national dialogue around preventing waste.

PURPOSE
This report provides a look to the future for delivery of Metro Vancouver’s Zero Waste Collaboration Initiatives. After over 10 years of program delivery, staff sought input to evaluate the current programming, and are looking ahead to recalibrate and strengthen Metro Vancouver’s niche role in the national dialogue on waste prevention.

BACKGROUND
The Zero Waste Collaboration Initiatives (the ZWC Initiatives) are a program developed by Metro Vancouver over 2011/2012 to support success in to the first two goals of 2011 Integrated Solid Waste and Resource Management Plan. The focus of the ZWC Initiatives is waste prevention. Programming is largely delivered in a collaborative model, with partners and program delivery across Canada.

ZWC Initiatives seek cross-jurisdiction and cross-sector approaches to reducing the waste that flows into municipal waste management systems. Finding solutions to reduce waste that is generated as a result of decisions made far outside the boundaries of the municipal waste system requires
dialogue, convening, advocating and implementing change at a national and even international scale. The proliferation of plastics, packaging, food waste and even paper are often driven by decisions made outside this region, and that is where Metro Vancouver and many others aligned in waste prevention look to long-lasting and system-wide solutions.

Currently ZWC Initiatives includes three distinct program areas: National Zero Waste Council, Zero Waste Conference and Love Food Hate Waste (LFHW) Canada. The Council and Conference were shaped in 2011 and the first Conference delivered in 2012. The LFHW Canada was the most recent addition to the initiatives, added in 2018.

2024 Responding to a Changing Landscape
The Committee receive for information the report dated February 1, 2024, titled “Zero Waste Conference 2023” which included a look ahead to future Conference delivery. This February report also noted that the Committee would receive an update on recalibrating across all three of the Zero Waste Collaboration Initiatives in a March report. The purpose of the recalibration is to maintain the benefits and integrity of the programming but adjust delivery to align with priorities, resourcing and input from partners aligned in waste prevention. As noted in that February report: Even in this short history the [Zero Waste Collaboration Initiatives] portfolio has made substantial progress on advancing waste prevention and circular economy concepts locally and nationally and will continue to do so.

As is natural to a program that has been delivered for over a decade - even with notable achievements - staff have undertaken a comprehensive review of all of the ZWC Initiatives. This review captures those achievements, but also considers the current landscape, where new organizations have launched in the circular economy space (and in some cases, incubated by the National Zero Waste Council). Examples are the Canada Plastics Pact (CPP) and Circular Economy Leadership Canada (CELC). Metro Vancouver’s affiliated Invest Vancouver is another introduction in the past decade and has a strong voice and role in advancing circularity. Also close to home, Metro Vancouver and other governments have made enormous progress on climate plans, which through many actions intersect with waste prevention, and make the connection to reduced emissions. Societal awareness and priorities have also shifted in the past decade. To meet this shift, the Zero Waste programming in the most recent years has had a focus on the circular economy, but has also began to intersect with climate action. Waste prevention, the circular economy and emissions reduction are intertwined in both challenges and solutions.

Review approach and recommendations
This section of this report describes the principles used in the review and the process to seek input from allies in waste prevention across Canada, as well as highlights findings from that input.

The process to review and analyze options on delivering ZWC Initiatives began in mid-2023 with input from program delivery partners, participants, and also program staff.
Any changes proposed will:

- continue to support Metro Vancouver’s updated solid waste management plan and also align with the programming through Invest Vancouver and Climate 2050
- continue to connect Metro Vancouver directly to national conversations about waste prevention, where solutions in this region require dialogue and policy at a provincial, national, and international scale
- be introduced in 2024, with implementation phasing in through 2024 and 2025. This phased timing will respect existing partnerships and contracts, provide transparent information to partners, and allow a smooth transition.

As noted above, staff invited input from a range of organizations and individuals either directly involved in delivering on the Zero Waste Collaboration Initiatives or participating in any of the three components. In addition to individual conversations, this included:

- a post-conference survey of participants in the 2023 Zero Waste Conference
- a series of interviews with 27 individuals working with the programming including past and present members of the National Zero Waste Council Board and key collaborators on Council initiatives
- input from the eight collaborating partners of Love Food Hate Waste Canada
- input from staff directly delivering on the work plan for the National Zero Waste Council, and staff delivering on Metro Vancouver’s Solid Waste Management Plan.

Findings were unanimous in support for the types of programming offered through the ZWC Initiatives. From the premise of collaboration, to bridging conversations among local government and businesses, to a unified national campaign to reduce food waste, participants see continued value in a collaborative, cross-jurisdiction, multi-sector approach to waste prevention. At the same time, the feedback also identified themes of:

- a growing field, and recommendations that Metro Vancouver adjust work plans as we continue to collaborate with other leading organizations and their growing expertise
- a realization of the need to find focus, including targeted waste sources, sectors, and scale of intervention
- organizations identifying their own need to focus and also suggest that Metro Vancouver’s initiatives also share a focused work plan.

**Delivery in future**

To recalibrate and strengthen Metro Vancouver’s niche role in the national conversation on waste prevention, the three ZWC Initiatives are evolving in these directions.

**National Zero Waste Council**

Metro Vancouver will maintain leadership in delivering the National Zero Waste Council, including the current model with a Management Board. There will be revisions to the administration, structure, work streams, membership, and reporting processes.

The Council will focus resources on two or three areas. Staff will develop a three-year work plan for each of these areas, including an approach to collaboration and expected outputs. Based in recent input, data and experiences with the National Zero Waste Council, the areas might include:
• circular economy (waste prevention, business opportunity and emissions reduction)
• built environment, including construction and demolition (waste prevention, business opportunity and emissions reduction)
• food waste (policy and national network).

Zero Waste Conference
As shared with the Zero Waste Committee in the February report referenced above, Metro Vancouver will continue to deliver the Conference. Delivery will shift to alternate years, with the next in 2025. This aligns with a network of organizations working in the circular economy sector that attract partially-overlapping audiences. It creates space for these aligned organizations to support one another’s activities rather than compete for attention. This also responds to feedback from participants who, while indicating an ongoing need for Metro Vancouver’s Conference (particularly as one of the few events with a Zero Waste and waste prevention focus), also note their own work plans and event calendars have competing activities. Bi-annual (alternating) delivery meets this request.

In alternating years where staff are not preparing for a Vancouver-based conference, this opens the opportunity for the team delivering the Conference to explore new program ideas to continue to offer content that is fresh and directly applicable to the expectations of participants. The additional time allows some space to explore external organizations’ events to research new program content, and also to participate in external events as speakers or co-hosts of program content, and to promote our own programming.

Love Food Hate Waste (LFHW) Canada
LFHW Canada is a bilingual national campaign to inspire and empower people to make their food go further and waste less. The campaign is led and coordinated by Metro Vancouver through the National Zero Waste Council alongside campaign partners. The campaign origins are through WRAP (Waste and Resources Action Program), which has an international reach.

Through LFHW Canada, national and local activations work together to enable citizens to hear consistent messaging, driving behaviour change over the long-term. Campaign partners fund the delivery of the campaign. Metro Vancouver is the lead delivery partner and contributes additional and substantial content in-kind (media, design, visuals, research coordination, administration etc.). Staff are exploring options to shift this campaign coordinating role to another organization, but maintain Metro Vancouver’s presence, through the National Zero Waste Council, as an advisor and participant. In alignment with the principle to maintain current relationships and contracts, any changes to the delivery model for a national Love Food Hate Waste campaign are envisioned to occur in 2025.
Alternatives
This is an information report. No alternatives are presented.

Financial Implications
No increase in funding is anticipated with this recalibration.

Conclusion
The Zero Waste Collaboration Initiatives started in 2011 and 2012 to foster a waste prevention conversation and action extending beyond the geographic boundaries of any one region, and to collaborate with those responsible for waste generation. Convened by Metro Vancouver, and with significant partnerships and collaboration from myriad external organizations, the ZWC Initiatives have made progress in waste prevention, and the Council in particular has generated a reputation for expertise and research-based recommendations. The delivery of the National Zero Waste Council and the Zero Waste Conference have ensured waste prevention is a priority conversation in Canada, and further connected this Canadian context to an aligned global conversation.

Through a review of internal work plans and with input from external organizations, staff will recalibrate the delivery of the Zero Waste Initiatives to ensure a strong future for these programs. Staff recommend that the Zero Waste Committee receive this report for information.

References
2. National Zero Waste Council
3. Zero Waste Conference
4. Love Food Hate Waste Canada
To: Zero Waste Committee
From: Shellee Ritzman, Division Manager, Corporate Communications
Date: March 14, 2024
Meeting Date: April 4, 2024
Subject: Create Memories, Not Garbage 2023 Campaign Results

RECOMMENDATION
That the Zero Waste Committee receive for information the report dated March 14, 2024, titled “Create Memories, Not Garbage 2023 Campaign Results.”

EXECUTIVE SUMMARY
To encourage more mindful gift giving and reduce the amount of unnecessary waste entering our landfill, the “Create Memories, Not Garbage” campaign helps to inspire residents to reduce their waste by giving achievable low-waste gift and wrap ideas. In 2023, Metro Vancouver’s region-wide, three-phased media promotion delivered relevant messages for the buying and disposal stages of the holiday season.

The campaign achieved 27.6 million impressions in 12 weeks. Online banner ads remain a top performing tactic and drove 65% of total traffic to the campaign website. Google AdWords had the most clicked content and covered low-waste gifts. Radio DJs were used to help bring life to the experience ideas in the Merry Memory Maker and both radio and television helped the campaign to achieve additional reach and frequency across the region.

PURPOSE
To update the Zero Waste Committee on the results of the 2023 regional holiday waste-reduction campaign, “Create Memories, Not Garbage.”

BACKGROUND
The “Create Memories, Not Garbage” (CMNG) campaign supports the waste reduction objectives in the Integrated Solid Waste and Resource Management Plan. 2023 was the 13th year of the CMNG campaign and the 16th year that Metro Vancouver ran a holiday waste reduction campaign.

This report provides an update on the results of the 2023 CMNG campaign as identified in the 2024 Zero Waste Committee Work Plan.

2023 REGIONAL “CREATE MEMORIES, NOT GARBAGE” CAMPAIGN RESULTS
Campaign Approach
The campaign ran from October 16, 2023 to January 7, 2024 and aimed to:

- Raise awareness of the amount of needless waste produced over the holiday season
- Have audiences choose to celebrate the holidays in ways that produce less waste
Previous research showed that as residents increase in age they are less likely to be concerned with reducing their waste, and that women tend to do most seasonal shopping, wrapping, and decorating. With this in mind, the campaign targeted women, focusing primarily on the younger 18-34 audience, that were aware of environmental issues and looking to be mindful consumers.

**Creative Direction and Messaging**
The campaign’s festive red and white platform continued to use puns to playfully draw the audience in while highlighting seasonal low-waste ideas. Similar to 2022, the 2023 campaign promoted experience-based gifts along with low-waste tangible gifts ideas, and low-waste wrapping tips.

To further emphasize giving experiences instead of tangible gifts, we asked the morning crew on Vancouver’s Christmas Station, MOVE 103.5, to try and promote some of the experience ideas in the campaign’s online app, the Merry Memory Maker.

**Campaign Website**
The campaign website is critical in helping overcome residents’ barriers to shopping more mindfully and creatively. It continues to feature low-waste tips organized by waste categories — gifts, wrap, décor, and post-Christmas recycling.

The low-waste gift section of the site continues to promote the Merry Memory Maker app — a web-based tool that has over 200 low-waste gift ideas organized by price range.

**Media Strategy**
The media buy spanned October through January to ensure we reach buyers at various shopping stages. The early shopper phase (October 16 to October 29), the main campaign with the heaviest media weight (October 30 to December 24), and the post-Christmas campaign (December 26 to January 7). This approach has been used for the past six years.

The strategy focused on online and in-store placements where the target audience spent time, particularly when in ‘gift-buying’ mode. Traditional placements used to build awareness and message frequency focused on television, radio, digital displays in shopping malls, and transit.

**Engagement of Metro Vancouver Members**
Campaign materials were shared with members’ communication staff and the REAC Solid Waste Subcommittee. Social images and videos are available for download on the Metro Vancouver website and members could request custom, co-branded materials. Campaign materials were shared by members and co-branded materials were also used by the Regional District of Central Okanagan for the second year.

**Evaluation**
Various methods were used to assess the overall performance of the campaign.
• **Website Performance**
  The main Christmas campaign (October 30 to December 24) received the most website traffic, specifically via the Merry Memory Maker page. Digital banner ads and google search drove the vast majority of traffic to the website. The campaign achieved over 54,000 visits with an average time on site of 5:39 minutes. This indicates that people visiting the site were engaged and browsing the content.

  The campaign website hosted an exit survey that asked residents one thing they would be willing to do this year to reduce their waste. For the second year in a row, giving experiences as gifts (33%) surpassed using low-waste wrap (27%).

• **Media Performance**
  Media tactics served over 27.6 million impressions across the 12-week campaign. Below are the most notable results for both digital and traditional tactics.

  - Facebook and Instagram served over 3 million impressions between videos, images, and stories, reaching at least 1.3 million residents. Social media continues to be a top performing metric for this campaign.
  - YouTube videos were seen over 493,000 times with an overall view-thru rate of 65% (benchmark is 40-50%)  
  - Banner ads delivered over 35,000 visitors to the campaign’s website with a strong click-thru rate of 0.40% (0.32% above the 0.08% benchmark)
  - Google Ads click-thru rates remained consistent with 2022 (9.6%) with low-waste gift ideas as the most commonly searched category — by women aged 25-34
  - Our sponsored article in the Vancouver Sun was read 3,763 times with a 3:42 minute average read time
  - Audio streaming achieved over 937,000 impressions and a completion rate of 80% — doubling last year’s campaign
  - Television garnered over 1.88 million impressions through PSAs on Global TV and on US cable stations
  - Radio impressions are estimated at 7.9 million reaching over 962,000 residents
    - New this year, Move 103.5 agreed to send two of their morning show DJs out to experience some ideas in the Merry Memory Maker app.
  - Out-of-home placements included digital screens in shopping malls (342,000 impressions) and transit bus backs (3.6 million impressions)

• **Post-Campaign Survey (bi-annual)**
  The post-campaign survey assesses campaign recall as well as shifts in attitudes, motivators, and barriers towards sustainable gift giving. Notable findings from 2023’s survey include:

  - 17% of respondents are familiar with the CMNG campaign — a decrease from what this campaign experienced before Covid (37% in 2019)
  - 1 in 4 residents said that the ads caused them to make changes to reduce the amount of waste they produce over the holidays
  - Among those who made changes, using no or recyclable gift wrap was the preferred choice (70%)
Holiday tips are well received although popular suggestions tend to already align with residents’ existing opinions

- Environmental impact of gifts is not a meaningful consideration for most residents
- Most purchases for adults reflected a preference for giving tangible gifts over experiences or gift cards — the 18-44 age group made the highest proportion of tangible purchases
- A majority of respondents opted for shopping online — particularly those in a family with children
- Common reasons for not giving experiences include the belief that experiences cost more and the sense that it is harder to find an experience that people will like

Plans for 2024 Regional Campaign

The overarching goals for 2024 include:

- Revisiting the audience to better define the group most likely to adopt the promoted behaviours
- Tailoring messages for the defined audience across the suite of creative materials and refreshing tactics as required
- Reducing the length of the media buy from 12 to 10 weeks to strengthen our media buying power in light of increased market competition and rising media costs
- Exploring new gift ideas for the Merry Memory Maker
- Creating custom content that speaks to common shopping categories (for example, stocking stuffer ideas or quick low-waste ideas for last-minute shoppers)
- Collaborating further with Metro Vancouver members to better understand how the campaign creative can support their holiday promotional plans

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The 2023 CMNG campaign had a $185,000 budget supported under the Zero Waste Communications Program of the 2023 General Government budget. The budget for the 2024 campaign is $185,000.

CONCLUSION

Create Memories, Not Garbage continues to offer residents ideas and inspiration for how to celebrate the holidays with less waste. While engagement with media and website behaviour continues to be positive, overall likelihood to change behaviour isn’t as clear. As we look to 2024, we will hone in on the audience most likely to be receptive to our campaign message, adjust the creative to speak to this group, strengthen our media spend in market through a more concentrated timeframe, and continue to promote ideas or tips to help make the desired behaviours more achievable and easy to adopt.

ATTACHMENT

1. Create Memories, Not Garbage – Sample Creative
Create Memories, Not Garbage – Sample Creative

Facebook and Instagram

Stories (animated)

Win any wrap battle with these low-waste ideas.  
This year, create memories not garbage.
Sew many low-waste gift ideas.
This year, create memories not garbage.

Fabric wrap  Sewing machine

Images

The very best low-waste gift ideas. No trout about it.
Look no further than these low-waste gift ideas
Experiences make a more memorable gift. You butter believe it.

Fishing  Binoculars  Movie tickets
Banner Ads (animated)

Fishing

Bowling

Google Ads

Google Ads
Radio “Experience” Promotion

Videos

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<th>Link</th>
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Vancouver Sun Sponsored Content
Shopping Mall – Digital Displays

Transit Bus Backs
Member Jurisdictions

City of Coquitlam @cityofcoquitlam · Dec 4, 2023
Try celebrating differently this holiday season to keep unnecessary waste from entering our landfills.

Need some inspiration? Metro Vancouver has loads of low-waste ideas to get you started. More info ow.ly/e3A50QqEJZ

Co-branded material – Regional District of Central Okanagan

District of West Vancouver @WestVNDistrict · Dec 20, 2023
Still Christmas shopping? Try giving differently this year with sustainable, locally made gifts. We can get you started on some ideas for sustainable gifts.
Visit creatememoriesnotgarbage.ca

#WestVan #CreateMemoriesNotGarbage

Co-branded material – Regional District of Central Okanagan

Create memories, not garbage

Give the gift of experience, no wrapping required.

For more info visit: rido.com/creatememories Email: info@rido.com
To: Zero Waste Committee

From: Kathy Preston, Director, Environmental Regulation and Enforcement

Date: March 12, 2024

Meeting Date: April 4, 2024

Subject: Appointment of Enforcement Officers and Deputy Solid Waste Manager

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 Michelle Jones as the deputy solid waste manager;
   ii. appoint Metro Vancouver employee Nicole MacDonald as the deputy solid waste manager;
   iii. rescind the appointment of Scott Brown as an officer; and
   iv. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald as officers; and

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 Scott Brown; and
   ii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald.

EXECUTIVE SUMMARY
Recent changes in staffing have resulted in a need to update staff appointments as Greater Vancouver Sewerage and Drainage District (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 recruitment within Metro Vancouver. Staff recommend that the GVS&DD Board appoint staff and rescind appointments accordingly.

PURPOSE
To appoint one Metro Vancouver employee as a Board-designated deputy solid waste manager, and two Metro Vancouver employees as Board-designated officers, and to rescind the appointments of one former officer, and the current deputy solid waste manager.

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. Two new positions within Metro Vancouver resulted in vacancies being filled in 2023. The *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996* grants authority to the Board-designated deputy solid waste manager and officers.

**ROLE OF THE DEPUTY SOLID WASTE MANAGER**
The Deputy Solid Waste Manager may exercise the same powers as the Solid Waste Manager and is appointed to assist the Solid Waste Manager in the administration of the *Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996*. These powers include the ability to issue licences under the Bylaw.

**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*.

**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 Michelle Jones as the deputy solid waste manager;
      ii. appoint Metro Vancouver employee Nicole MacDonald as the deputy solid waste manager;
      iii. rescind the appointment of Scott Brown as an officer; and
      iv. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald 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 Scott Brown; and
      ii. appoint Metro Vancouver employees Sonia Ganjehei and Nicole MacDonald.

2. That the GVS&DD Board receive for information the report dated March 12, 2024, titled “Appointment of Enforcement Officers and Deputy Solid Waste Manager” and provide alternative direction to staff.
FINANCIAL IMPLICATIONS
There are no additional financial implications as the GVS&DD appointees are already employed by Metro Vancouver and there are no costs associated with rescindments.

CONCLUSION
Recent changes in staffing have resulted in a need to update staff appointments as the GVS&DD Board-designated officers and deputy solid waste manager under the Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996, and the Offence Act. Staff recommend that the GVS&DD Board adopt Alternative 1.
To: Zero Waste Committee
From: Paul Henderson, General Manager, Solid Waste Services
Date: March 21, 2024
Meeting Date: April 4, 2024
Subject: Manager’s Report

RECOMMENDATION
That the Zero Waste Committee receive for information the report dated March 21, 2024, titled “Manager’s Report.

Recycling Coffee Cups
At the February 8, 2024 Zero Waste Committee meeting the committee received a presentation from the Binners’ Project, prompting questions about coffee cup recycling and disposal. Paper cups for hot and cold beverages, such as coffee, are accepted for recycling in Recycle BC’s residential recycling collection program for packaging and paper products. Of the total amount of material collected by Recycle BC in 2022, 206,870 tonnes was recycled and 14,208 tonnes was disposed as garbage. Recycle BC publishes the amount of materials (e.g., fibre, glass, plastic, etc.) recycled in its Annual Report, however recycling statistics for specific types of packaging such as coffee cups are not reported.

Recycle BC is also responsible for educating consumers about what materials should go into the residential recycling systems and provides resources on their website. Metro Vancouver and member jurisdictions align with these resources and complement with additional education materials. Metro Vancouver:
• provides detailed information on recycling a full range of materials including coffee cups through Metro Vancouver Recycles, and contracts with the Recycling Council of British Columbia to provide information to residents and businesses by phone and on the internet;
• provides multi-unit residential recycling room signage with coffee cup icons;
• teaches residents that plastic-lined coffee cups don’t belong in the green bin through Food Scraps aren’t Garbage; and
• encourages the use of reusable mugs through the What’s Your Superhabit campaign.

Coffee cups are not consistently collected for recycling in the commercial sector due to lack of readily available recycling options. In the BC Ministry of Environment and Climate Change Strategy document, Advancing Recycling in B.C.: Extended Producer Responsibility Five-Year Action Plan the BC Government committed “to determine a policy approach to manage ICI materials that drives the best environmental outcomes, considers the management systems already in place, and supports a circular economy.”

On February 28, 2024 the City of Vancouver Council passed a motion to work with local governments and the Province to improve circularity of coffee cups in BC, and to encourage the Government of Canada to adjust their exemption on accessible straws to better meet the needs of
those who use them. Metro Vancouver staff are reviewing Vancouver’s resolutions and will report back with additional information at an upcoming Zero Waste Committee meeting.

**Solid Waste and Recycling Industry Advisory Committee 2024 Membership**

The call for membership submissions for the 2024 Solid Waste and Recycling Industry Advisory Committee was announced on January 26, 2024. Membership is voluntary, carries a one-year team, and is self-selecting through an annual open call. The Industry Advisory Committee can have an unlimited number of members and is comprised of representatives of private waste and recycling collection companies, processing companies, and their industry associations affected by existing and proposed operational and policy items related to solid waste and recycling plans, policies, and services within Metro Vancouver.

The purpose of the Industry Advisory Committee is to act as a forum through which industry representatives receive information, provide advice, and channel feedback.

The first Industry Advisory Committee meeting of the 2024 membership committee was held on March 5, 2024, from 2:00 pm to 4:00 pm. The committee Co-Chair, Director Craig Hodge, welcomed 34 committee members (Attachment 1) including Lori Bryan, Waste Management Association of BC, the current member Co-Chair. The number of 2024 Industry Advisory Committee members increased by 4 compared to the number of 2023 members.

**Construction & Demolition Workshop**

On February 29, 2024, Metro Vancouver hosted a workshop with member jurisdictions to facilitate an information exchange on local municipal bylaws related to reduction of construction and demolition waste, enforcement challenges, and secondary markets for used building materials.

The workshop presentations from Metro Vancouver outlined current Metro Vancouver initiatives, regional statistics, and regulation of private waste facilities. Invited presentations from the City of Richmond and District of North Vancouver provided updates on their municipal demolition bylaws, followed by a discussion on opportunities to move building materials up the waste hierarchy, including house moving and deconstruction.

Input provided by workshop participants will help inform subsequent supportive actions to be taken by Metro Vancouver and member jurisdictions to reduce construction and demolition waste. High-level feedback included the creation of a regional working group to advance deconstruction, building relocation and reuse end markets.

**Project Re-Bounce 2023 Summary**

Metro Vancouver has been working with Project Re-Bounce since 2020. Project Re-Bounce is a program initiated by Karen Levine, a member at Vancouver Lawn Tennis & Badminton Club who was asked to lead sustainability initiatives for the club. The program started with used tennis and squash balls, providing an alternative to landfill disposal of these end-of-life materials. Working closely with Metro Vancouver, Project Re-Bounce has grown to include badminton shuttles, golf balls, tennis ball cans, broken/unusable rackets, runners, racquet strings, and skis and snowboards. Re-use is a key component of Project Re-Bounce, ensuring that all materials collected truly are at
end of life. Following the success of the program in Metro Vancouver, the program expanded to include out-of-region tennis clubs including Salmon Arm and Sechelt/Gibsons plus a number of other communities. In 2023, 312,520 tennis ball equivalents were delivered for end of life disposal at the Waste-to-Energy Facility, bringing the total since inception to 652,955 tennis ball equivalents. Project Re-Bounce continues to look at expansion opportunities to include additional end of life sports equipment items and inclusion of additional out of region locations.

Procurement Update

Waste-to-Energy Facility Bottom Ash Beneficial Use Pilots:
The beneficial use of bottom ash from the Waste-to-Energy Facility could result in a reduction of up to 40,000 tonnes per year of material requiring disposal. At full scale, beneficial use of bottom ash could reduce regional disposal requirements by approximately 5% and reduce greenhouse gas emissions associated with mining and transporting raw materials.

As reported to the Zero Waste Committee in May 2022, Birco Environmental Services was engaged to complete pilot testing in support of full scale beneficial use of bottom ash program, where the bottom ash is consumed as an alternate material in the cement production process. After gathering analytical data, Birco processed about 1,000 tonnes of bottom ash, making it suitable for use as a raw material at the Heidelberg Materials cement plant. On November 23, 2023, Heidelberg conducted the first of two trials with the processed bottom ash supplied by Birco. The first was a trial of approximately 100 tonnes which confirmed the material met the requirements of their operating permit. The second trial involved using the balance of the prepared material over a longer period of time. No negative impacts on kiln operation were observed during this trial. Results are positive and a final report is forthcoming.

A second bottom ash processing trial is also underway, with GRT Environmental processing the material and it being used at the Lafarge-Holcim Richmond Cement Plant as an alternate raw material in the cement production process. The contract for this work has been awarded and GRT is currently performing laboratory and material characteristic testing to ensure their process is correctly configured. Once complete, this trial will follow a similar process to the Birco Environmental/Heidelberg Materials effort. GRT will process the material, Lafarge will perform a stack test, and then use the material in the cement production process. Expected completion of this pilot is late Q2, 2024.

Metro Vancouver’s goal is to use the learnings of the pilot to initiate a procurement process to beneficially use all of the bottom ash from the Waste-to-Energy Facility.

Small Load Waste Processing Trial:
A contract is now in place with Geocycle Canada Inc. for a pilot trial for 6,000 tonnes of small load waste, and the trial is in development. Small load waste is material delivered to Metro Vancouver’s recycling and waste centres by primarily pick-up trucks, vans and trailers and had a composition similar to construction and demolition waste with approximately 60% wood, and very little food waste or yard trimmings, or potentially hazardous materials. Geocycle will receive small load waste from regional recycling and waste centres, to sort, screen, and process this material to recover recyclables and produce alternate fuel suitable for combustion in cement kilns. This is a pilot
program for small load waste processing, and if successful approximately 60,000 tonnes of this material would be available for processing per year, if a full scale processor were interested. Geocycle has applied for a solid waste facility license to allow processing of the material at their existing facility in Richmond.

**Waste-to-Energy Facility Carbon Capture, Transportation Utilization and Storage Assessment:**
With funding from the Regional District Sustainability Innovation Fund, in 2023, Norda Stelo completed an evaluation of applicable technological approaches for capturing and removing carbon dioxide (CO₂) from industrial flue gas streams in large industrial facilities that release over 50,000 tonnes of CO₂ per year, in the Metro Vancouver region. The study noted that a number of facilities in the Metro Vancouver region may be suitable for CO₂ capture, and highlighted the need for further evaluation of site-specific factors, such as potential costs, availability of adequate space, utilities (e.g., energy source, water supply), and the ability to integrate with existing operations. Geological CO₂ storage options were identified and evaluated, including potential associated transportation options and their potential risks and benefits.

Building off this study, Metro Vancouver has retained a consulting team of Norda Stelo, Exergy, and CWA Engineers to complete an assessment of CO₂ capture, transportation, utilization and storage options specific to the Waste-to-Energy Facility, and determine requirements, costs and other conceptual design details (technology, space, energy, project delivery options, etc.) for capture of all greenhouse gas emissions from the facility. The study is planned to be complete by the end of the year and the results will be reported back to Committee.

**Zero Waste Committee Work Plan**
Attachment 2 to this report sets out the Committee’s Work Plan for 2024. The status of the Committee’s key priorities is shown as pending, in progress, or complete together with the quarter that each is expected to be considered by the Committee.

**ATTACHMENTS**
1. Solid Waste and Recycling Industry Advisory Committee 2024 Membership
2. Zero Waste Committee Work Pan

65269492
# 2024 Solid Waste and Recycling Industry Advisory Committee

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<thead>
<tr>
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<th>ORGANIZATION</th>
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<tr>
<td>Achilles Mallari</td>
<td>Sierra Waste Services Ltd.</td>
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<td>Aiden Kiani</td>
<td>Lock-Block Ltd.</td>
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<td>Angus MacFarlane</td>
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<td>Christian Dietrich</td>
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<td>James Collins</td>
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<td>Jamie Kaminski</td>
<td>Happy Stan’s Recycling Services Ltd. (HSR Zero Waste)</td>
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<td>Jeff Gontovnick</td>
<td>1-800-GOT-JUNK? Fraser Valley</td>
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<td>Jenika Diamant</td>
<td>Capital Salvage</td>
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## 2024 CO-CHAIRS

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<tr>
<td>Director Craig Hodge</td>
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<td>Lori Bryan</td>
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<td>Metro Vancouver Board of Directors</td>
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<td>Waste Management Association of BC</td>
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## Zero Waste Committee 2024 Work Plan

**Report Date:** March 21, 2024

### Priorities

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<td>Tipping Fee Bylaw Updates</td>
<td>2023 Waste-to-Energy Facility Environmental Performance Summary</td>
<td>2024 Single-Use Item Reduction Campaign Results</td>
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<td>Solid Waste Management Plan: Vision and Guiding Principles</td>
<td>GVS&amp;DD Notice of Bylaw Violation Enforcement and Dispute Adjudication Bylaw</td>
<td>Recycling and Waste Centre Reuse Scale-Up</td>
<td>Solid Waste Services 2024 Financial Performance Reporting and Annual Forecast #3</td>
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<td>2022 Solid Waste and Recycling Biennial Report</td>
<td>2023 Waste Composition Data</td>
<td>Repair Events, Reuse Programs, and Regional Food Recovery Network</td>
<td>North Surrey and Langley Recycling Depot Development</td>
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### Status

- **In progress**
- **Pending**
- **Complete**