To: Liquid Waste Committee

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

Date: April 30, 2021 Meeting Date: May 13, 2021

Subject: **Environmental Management System for the Liquid Waste Utility**

RECOMMENDATION

That the Liquid Waste Committee receive for information the report dated April 30, 2021 titled "Environmental Management System for the Liquid Waste Utility".

EXECUTIVE SUMMARY

The Liquid Waste Services (LWS) Department has adopted the ISO 14001 Environmental Management System (EMS) approach to proactively, systematically, and consistently identify, evaluate and prioritize environmental risks for mitigating action. The analysis indicates that most risks related to core Liquid Waste utility business have rigorous management systems in place to keep these risks to a minimum.

Core risks that require strengthened mitigation include combined sewer overflows, management of compounds of emerging environmental concern, and wastewater treatment air contaminants/greenhouse gas emissions. There are areas that require development of new environmental programs. These include management of solid/hazardous waste at liquid waste facilities, handling of fuel and de-icing salt, management of invasive species, and air contaminants/greenhouse gas emissions from vehicles and cooling equipment.

A future Environmental Management Policy will commit LWS (and Water Services) to the ISO 14001 EMS approach and drive decision-making to mitigate risks and continuously improve utility environmental performance.

PURPOSE

To provide the Liquid Waste Committee with information regarding development of the Environmental Management System for the Liquid Waste utility and with an overview of Liquid Waste Services environmental risk areas and mitigating actions.

BACKGROUND

Metro Vancouver is committed to the protection of public health and the environment through its numerous policies and long range plans. The Water and Liquid Waste utilities are fulfilling this commitment following the ISO 14001 Environmental Management Systems. Through the implementation of an internationally recognized EMS, we establish robust policies/protocols/procedures, staff training, regular check-ups and corrective habits to achieve regulatory compliance in all areas of liquid waste management. This report summarizes an approach to identification and analysis of LWS environmental risks, their potential environmental impacts, and

mitigation actions necessary to achieve regulatory compliance and improve environmental performance of the Liquid Waste utility.

LIQUID WASTE SERVICES ENVIRONMENTAL RISKS

Risk Analysis and Prioritization

A review of LWS activities identified fifty environmental risks (Attachment 1) for the Liquid Waste utility. The risks are summarized into core and operational risk categories with the majority having regulatory compliance obligations. Core risks are traditionally associated with wastewater treatment and discharges to water, land and air. The environmental impact of these risks are understood through historical monitoring and modelling. In addition to core risks, there are environmental risks that are traditionally related to operational activities, such as fuel spills, spread of invasive species or waste management activities. Potential impacts from environmental risks range from contamination of water, soil and air, to far-reaching cumulative effects such a climate change, loss of biodiversity and bio-accumulation of toxins in the environment with potential impacts to public health and terrestrial and aquatic life.

All fifty risks were evaluated systematically for environmental significance considering environmental impact, regulatory compliance, and public concern. The environmental impact was based on a score calculation of potency, term, scale and frequency. Attachment 2 shows the evaluation methodology. The methodology is repeatable and transparent, and provides a mechanism to periodically re-assess risks when changes in work activities, regulations or scientific understanding of environmental impact occur.

Risk Mitigation Findings

The risk analysis confirmed that most traditional core wastewater risks have rigorous management systems in place to meet current regulatory and due diligence requirements. Examples of these systems include routine monitoring of effluent and biosolids along with their receiving environments, and response and reporting protocols for environmental incidents. Existing LWS resources are allocated to these systems and must be maintained in order to monitor performance and keep these risks to a minimum.

A few core risks require strengthened controls. These include progress towards eliminating combined sewer overflows, management of compounds of emerging environmental concern in effluent and biosolids, and air emissions such as greenhouse gases (GHGs) from wastewater processes. For these risks, incorporating rapidly developing and complex areas of science and changing regulations into plans and initiatives for liquid waste infrastructure design, operations and source control are critical. These core risks will be addressed via capital planning, operational budget decisions, and coordination and collaboration with municipalities.

The risk analysis also revealed that most environmental risks in the operational risk category have been sufficiently mitigated. However, a number of areas require new mitigation tools. These include management of waste, fuel, refrigerants, de-icing salt, invasive species, and emissions from vehicles. Mitigation action for these risks entails developing new or enhanced environmental programs.

A summary of the risk areas and mitigation action priorities is shown in Attachment 3.

Addressing all operational priorities will ensure due diligence and full environmental regulatory compliance of the Liquid Waste utility. This requires investment in staff awareness, capacity and competency, innovation and collaboration in organizational processes, and enduring commitment.

An Environmental Management Policy will be put forward to formalize the commitment to this risk-based, systematic ISO 14001 EMS approach to inform management decisions and future budgets that are needed to mitigate environmental risks to an acceptable level. This policy will be developed in partnership with Water Services using the same methodology.

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

FINANCIAL IMPLICATIONS
The costs associated with developing the ISO 14001 EMS approach and maintaining existing rigorous systems for management of traditional core environmental risks to meet current regulatory and due diligence requirements, are funded from the annual LWS operating budget.

The costs associated with developing strengthened or new risk mitigation measures will be incorporated into future GVS&DD operating budgets on an incremental basis.

CONCLUSION
Using an ISO 14001 EMS approach to analyze LWS environmental risks, most core wastewater related risks are shown to have rigorous management systems in place and LWS resources dedicated to keeping these risks to a minimum. Core risks requiring strengthened mitigation are combined sewer overflows, management of compounds of emerging environmental concern, and wastewater process air emissions or GHGs. Operational work activity risks such as waste management, fuel and de-icing salt handling, invasive species, and air contaminants/GHG emissions from vehicles and cooling equipment, require new or enhanced environmental programs. An Environmental Management Policy will drive LWS decision-making to support ongoing priority risk mitigation and continuous improvement in environmental performance.

Attachments
1. List of LWS Environmental Risks (2019-2020)
2. Overview of Environmental Risk Significance Evaluation Methodology
3. Summary of LWS Environmental Risk Areas and Mitigating Actions

43375114

List of LWS Environmental Risks (2019-2020)

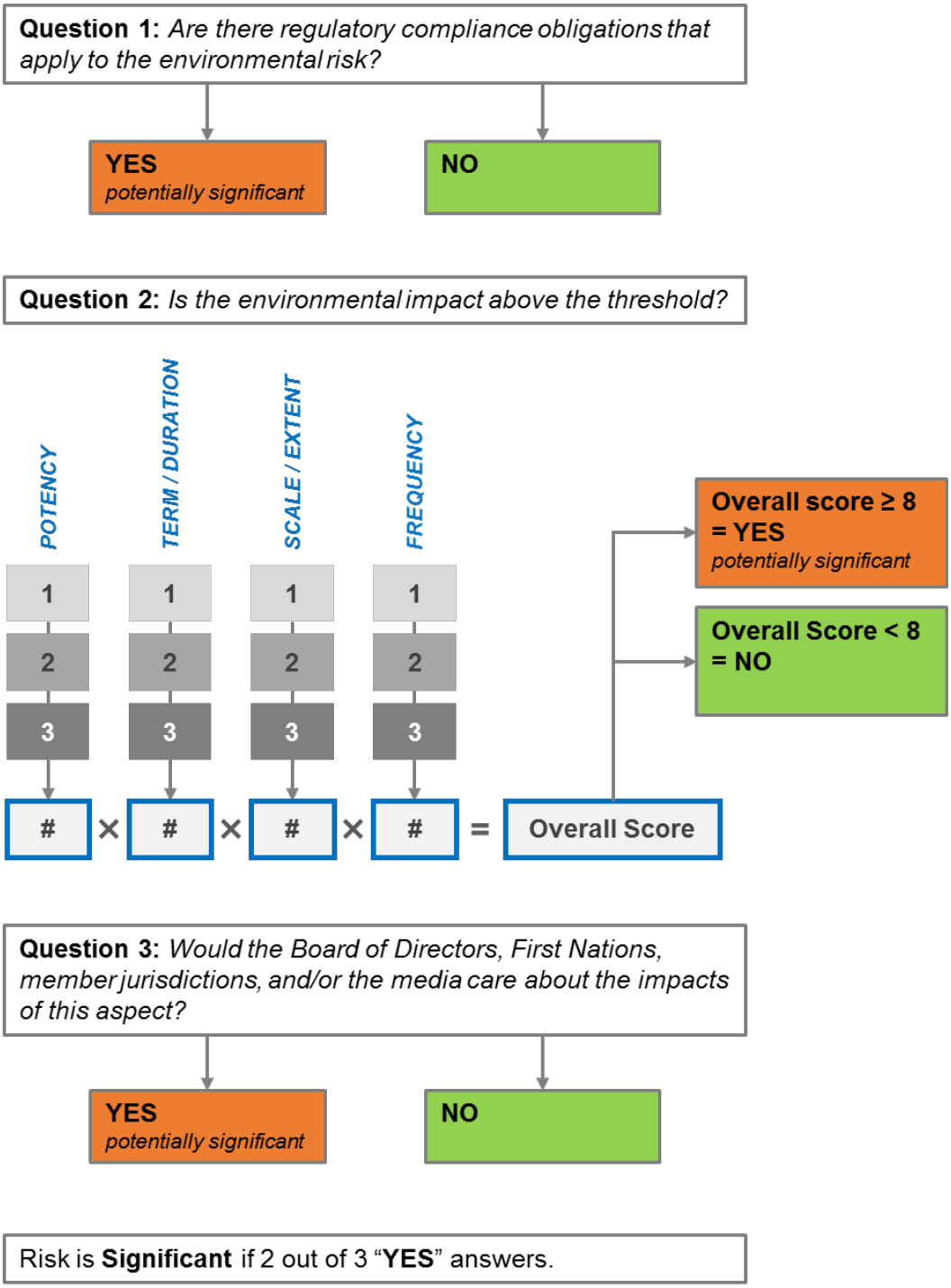
Discharges to Water
Effluent BOD or TSS Exceedances
Effluent Dechlorination Interruptions
Effluent Disinfection Interruptions
Unusual Effluent Quality: Spikes
Drinking Water (Washwater) Discharges
WWT Bypasses
Biosolids Spills to Water
Biosolids Stockpile Runoff & Leachate
Routine Effluent: Regulated Substances
Effluent Toxicity
Wet Weather Sanitary Sewer Overflows (SSOs)
Dry Weather SSOs/CSOs
Combined Sewer Overflows (CSOs)
Routine Effluent: Compounds of Environmental Concern
Trucked Liquid Waste
Trucked Liquid Waste Quality
Stormwater Management
Site Stormwater & Leachate Management
Urban Drainage: Stormwater Quality & Quantity
Flood Management
Urban Drainage: Flood Management

Discharges to Land
WWTP Effluent Spills
Biosolids Quality: Non-Compliant
Biosolids Handling & Application
Biosolids Spills to Land
Biosolids Quality: Compounds of Environmental Concern
Land Contamination
Historical Land & Groundwater Contamination
Habitat Management
Pest Management
Urban Drainage: Maintenance of Creek Beds/Banks
Control of Terrestrial Invasive Species
Other
Electricity Use
Noise Management
Light Management
Drinking Water Use

Discharges to Air
Routine Odours
Non-routine Odours
Dust Management
Equipment Air Contaminants/GHG Emissions
Wastewater Air Contaminants/GHG Emissions
Vehicle Air Contaminants/GHG Emissions
Refrigerant Management
Waste Management
WWTP Grit & Screenings Disposal
Solid Waste Management
Wastes from Maintenance of Infrastructure
Hazardous Waste Management
Materials Management
Small Quantity Chemical Storage & Handling
Compressed Gas Storage & Handling
Equipment Oil Handling
Bulk Chemical Storage & Handling
Small Quantity Fuel Storage & Handling
Material Procurement
De-Icing Salt Storage & Handling
Bulk Diesel Storage & Handling

Overview of Environmental Risk Significance Evaluation Methodology

Risk significance is determined by asking three questions:



Risk is **Significant** if 2 out of 3 "**YES**" answers.

Summary of LWS Environmental Risk Areas and Mitigating Actions

Core Risk	Description	Mitigating Action
Management of regulated substances in effluent and biosolids	Management of routine discharges of regulated substances such as nutrients, metals, organic compounds, pesticides and flame retardants in wastewater treatment plant effluent and biosolids.	Continue provision of required monitoring, assessments, process controls and infrastructure.
Management of environmental incidents associated with effluent and biosolids	A variety of regulatory non-compliance incidents potentially resulting from wastewater treatment interruptions or high loads of contaminants illegally discharged into the sewer.	Continue advancement of source control strategies and maintain treatment process infrastructure, monitoring and controls, including resilient back up power.
Sanitary Sewer Overflows (SSOs)	Discharge of untreated and/or diluted wastewater due to power interruption, infrastructure malfunctioning, or from sanitary sewer relief locations due to insufficient sanitary sewer capacity during wet weather.	Continue implementing inflow and infiltration (I&I) reduction strategies and collection system maintenance and upgrades. Maintain rigorous response protocols.
Odours emitted by liquid waste treatment facilities or infrastructure	Includes typical odours emitted from routine operations (e.g. sewers, pump stations, wastewater treatment plants, biosolids) as well as typical odours from occasional incidents (e.g. sewer air flow, malfunctioning equipment or process).	Continue sewer gas (corrosion control) programs, installation of odour control infrastructure and technologies, odour monitoring and public complaint response systems.
Management of compounds of emerging environmental concern in effluent and biosolids	Management of routine discharges of WWTP effluent and biosolids containing substances of emerging environmental concern such as microplastics, pharmaceuticals, personal care products, etc.	**Priority for ongoing consideration, setting objectives and defining strategy to inform capital planning and/or source control options.**
Combined Sewer Overflows (CSOs)	Rainfall dependent discharges of untreated wastewater diluted with stormwater at combined sewer overflow locations.	
Wastewater Air Contaminants/GHGs	GHGs from flared biogas as well as fugitive emissions from sewers and WWTPs.	
Operational Risk	**Description**	**Mitigating Action**
Solid/Hazardous Waste Management	Solid and hazardous waste generation, storage, handling and disposal.	**Priority for development and implementation of a new or enhanced environmental program.**
Fuel Handling	Fuel delivery, storage and handling to prevent releases.	
Equipment Air Contaminants/GHGs	Air contaminants and GHGs from refrigerant gases and vehicle emissions.	
Invasive Species Management	Ineffective control of plant invasive species directly affecting ecosystems and ability to maintain infrastructure.	
De-icing Salt Use	De-icing salt used on road or path surfaces and bulk stored at some facilities having a potential to contaminate soil and water.	

To: Liquid Waste Committee

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

Date: May 5, 2021 Meeting Date: May 13, 2021

Subject: **Testing for COVID-19 Virus in Wastewater**

RECOMMENDATION

That the Liquid Waste Committee receive for information the report dated May 5, 2021, titled "Testing for COVID-19 Virus in Wastewater".

EXECUTIVE SUMMARY

This report provides an overview of the Liquid Waste Services efforts related to wastewater testing which began in spring 2020, for SARS-CoV-2, the virus that causes COVID-19. Results have been posted on Metro Vancouver's website. Increasing and decreasing trends with each new wave of the outbreak or new phase of restrictions are apparent, although the concentration of the virus in wastewater varies across the region and has changed over time. In spite of numerous challenges, the results provide a valuable source of information for public health agencies. Future work is expected to include genetic sequencing by the British Columbia Centre for Disease Control and the University of British Columbia to allow for differentiation of various virus strains.

PURPOSE

To provide the Liquid Waste Committee with an overview of the wastewater testing for SARS-CoV-2, the virus that causes COVID-19, in samples collected from the influent of five wastewater treatment plants (WWTPs) in the region and results generated to date.

BACKGROUND

The COVID-19 pandemic has been underway for over a year. In the spring of 2020, Metro Vancouver began working with the British Columbia Centre for Disease control (BCCDC) Public Health Laboratory and the University of British Columbia (UBC) to monitor SARS-CoV-2 in wastewater. This collaborative initiative is an expansion of an existing project investigating gastrointestinal illness-causing viruses in wastewater that was previously initiated in partnership with the BCCDC. The implemented approach, often referred to as wastewater based epidemiology, is a technique that includes monitoring and analysis of wastewater to understand an infectious disease and its prevalence in the community. It provides a way to understand the population served by the system as a whole, and potentially the emergence of new outbreaks or resurgence.

METHOD DEVELOPMENT AND CHALLENGES

Wastewater is a complex matrix making virus work challenging. Hence the BCCDC initiated a phased approach, using previously developed quantitative polymerase chain reaction methods to maximize efficiency. Initial efforts focused on testing and validating the methods to analyze the virus in weekly

collected samples of raw influent from Annacis Island WWTP, the largest plant in the region. In September 2020, efforts expanded to include weekly samples from all five WWTPs.

The Metro Vancouver – BCCDC/UBC collaboration is contributing scientific knowledge to the COVID-19 Wastewater Coalition, the national collaboration of municipal utilities, researchers, public health and government agencies organized by the Canadian Water Network. The initiative is also linked with Statistics Canada/Public Health Agency of Canada Wastewater Survey, which involves wastewater testing for Covid-19 by the National Microbiology Laboratory in Winnipeg.

In Canada, as well as globally, scientists developed new molecular methods that use various genes indicative of the SARS-CoV-2 virus for both clinical and wastewater testing. As numerous researchers use different and emerging methods, an important aspect of the scientific effort is the assessment and evaluation of various analytical procedures. This is critical in order to achieve consistency, understand and explain the variabilities, and enable comparison of results generated across the country and over time.

RESULTS

Since February 22, 2021, results have been available on Metro Vancouver's website (see Reference). The information currently only indicates whether the virus is present in wastewater and its weekly oscillations, and as such, the graphs should be considered in context of trend over time, and not as absolute numbers. However, the information provides an insight into a segment of the population that has not been tested clinically, and informs on what is happening on a broader scale. Results are provided for each of the five WWTPs (Attachment, Figures 1 and 2). The changes in virus concentrations can be compared with trends in case numbers and/or changes in how restrictions are implemented or relaxed over time (Attachment, Figure 3).

Results for each WWTP provide a picture of a different region of varying size and population within Metro Vancouver. Assessments are currently underway to consider differences between the plants/sewerage areas and the use of other indicators to normalize the results to allow for regional comparison. Annacis Island and Iona Island WWTPs are the two largest plants and they both receive stormwater, resulting in a more diluted influent during rain events. The size of the sewerage area and the time wastewater spends in the collection system also differs, and may result in different degree of viral degradation within the system. The population serviced may also be a consideration. The team, as are others across Canada and around the world, is evaluating alternate approaches to review and assess the results. Estimating load or normalizing to another virus or substance within wastewater may allow for better comparison among the sewerage areas than the currently employed virus concentrations.

The data are being shared with public health agencies, to augment current population modelling of COVID-19. The results will also aid health authorities in their efforts to combat COVID-19 in BC by providing information on population trends and possibly an early warning of future waves of the disease.

NEXT STEPS

As the third wave began, steps were already underway by the BCCDC and UBC to develop new approaches for metagenomic sequencing of SARS-CoV-2 in wastewater to differentiate between various virus strains. Future efforts may also include collection of samples within the Metro Vancouver collection system.

It is expected that what is learned for COVID-19 will be useful in fighting future pandemics and more importantly for using wastewater to support other public health initiatives to improve the community/regional/global understanding of antimicrobial resistance, other infectious diseases, illicit drug use, etc. Metro Vancouver intends to look into the fate of SARS-CoV-2 throughout the wastewater treatment process, with a goal to better understand occupational exposure risks, and the amount of virus discharged into the environment following wastewater treatment.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

This project has been funded from the annual GVS&DD operating budget.

CONCLUSION

Metro Vancouver has been collaborating with the BCCDC and UBC on testing of the SARS-CoV-2 virus in wastewater at all five regional WWTPs. This work is contributing scientific knowledge to a number of national initiatives that are investigating the COVID-19 virus in wastewater. The results have been posted at Metro Vancouver's website. The virus concentration varies across the region and has changed over time. Assessments are currently underway to allow for better comparison across the Metro Vancouver region. This includes consideration of impact of the temporal wastewater flow fluctuations and differences between the sewerage areas, or the use of other indicators to normalize the results. The data has been shared with public health agencies, to augment current population modelling of COVID-19 and to help combat the disease by providing confirmation and possibly an early warning of future waves. Metro Vancouver plans to look into the fate of SARS-CoV-2 throughout the wastewater treatment process, with a goal to understand occupational exposure risks, and the amount of virus discharged into the environment following wastewater treatment.

Attachment

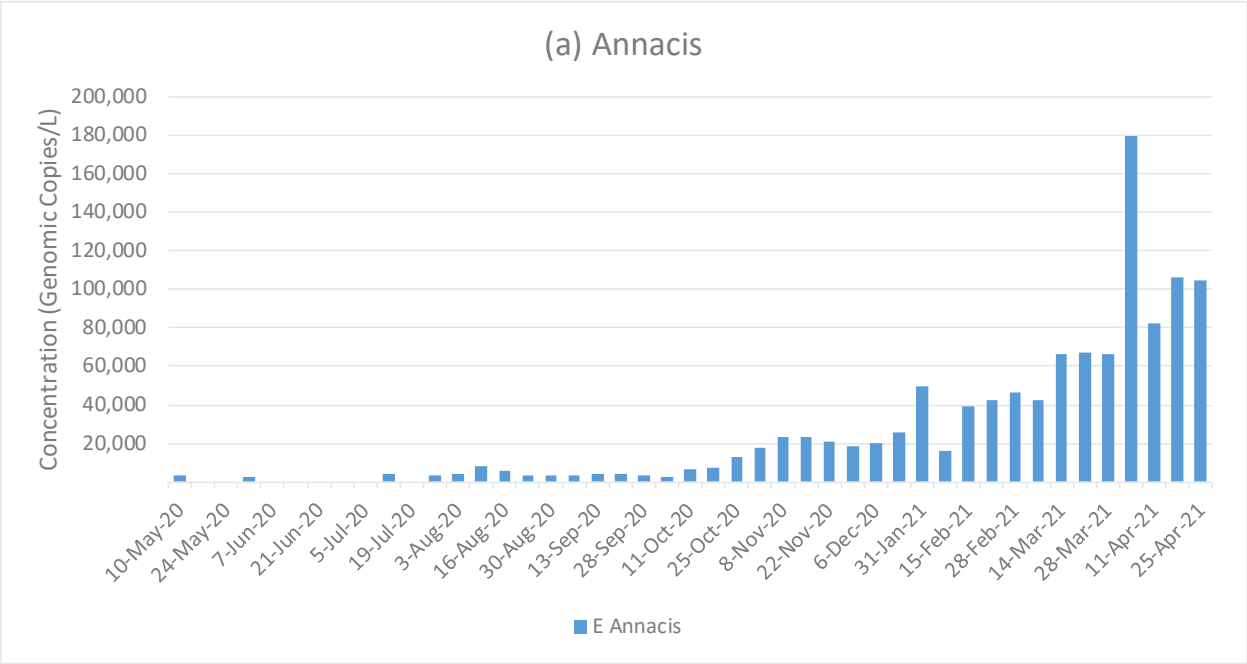
SARS-CoV-2 concentrations in wastewater from the five Metro Vancouver Wastewater Treatment Plants compared with Vancouver Coastal and Fraser Health Authorities' case data

Reference

Testing for COVID-19 Virus in Wastewater - Results on Metro Vancouver website

44432337

Figure 1 SARS-CoV-2 concentration in wastewater for the wastewater treatment plants within the Fraser Health Authority region: (a) Annacis Island and (b) NW Langley wastewater



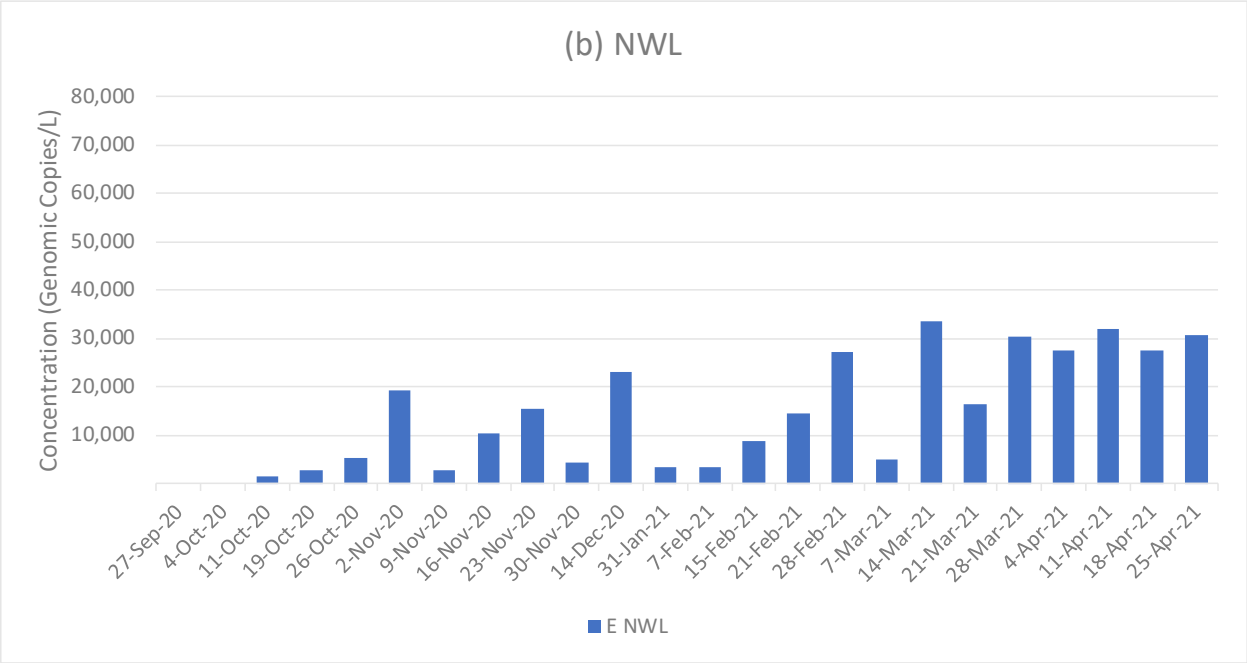


Figure 2 SARS-CoV-2 concentration in wastewater for the wastewater treatment plants in the Vancouver Coastal Health Authority region: (a) Iona, (b) Lions Gate, and (c) Lulu Island

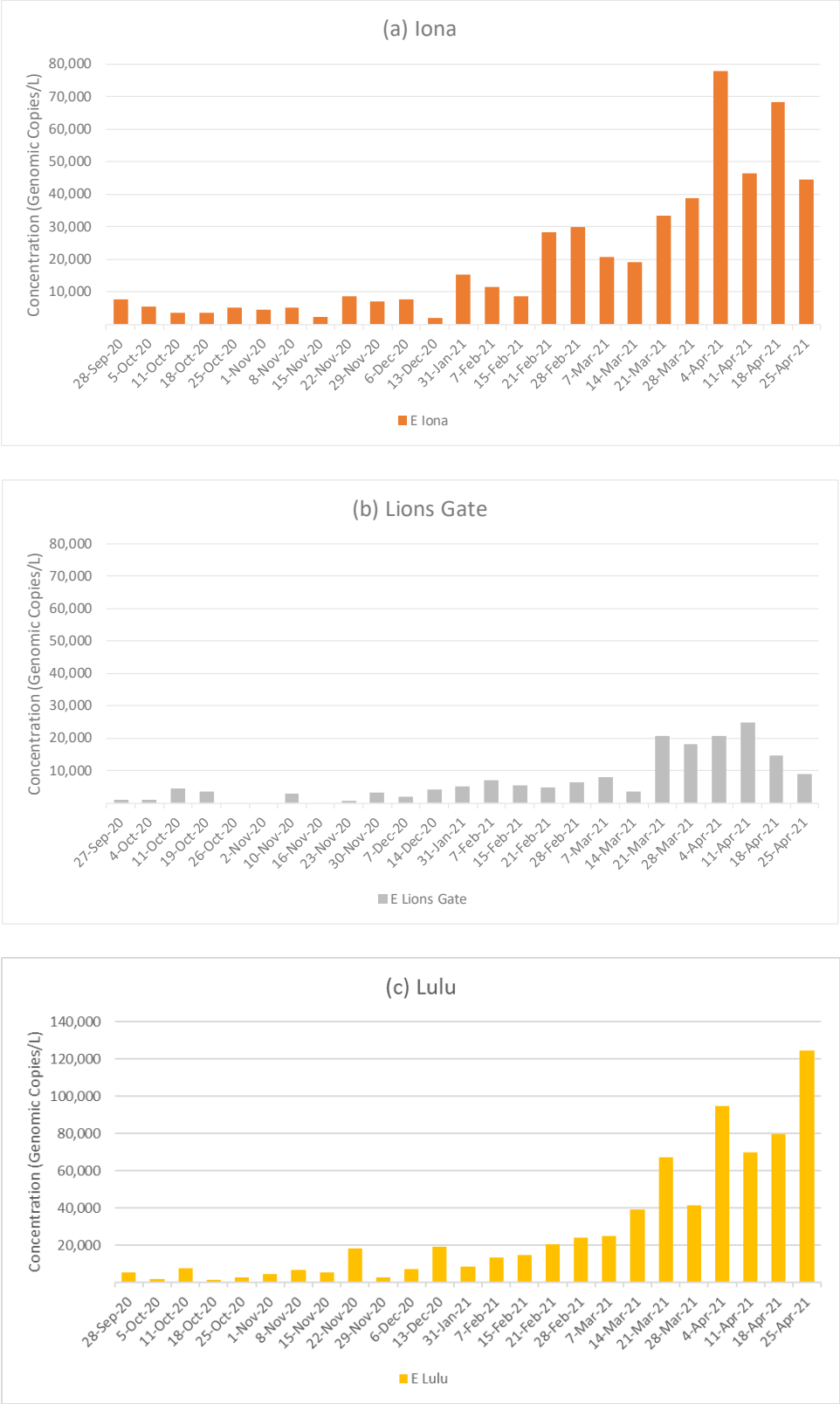
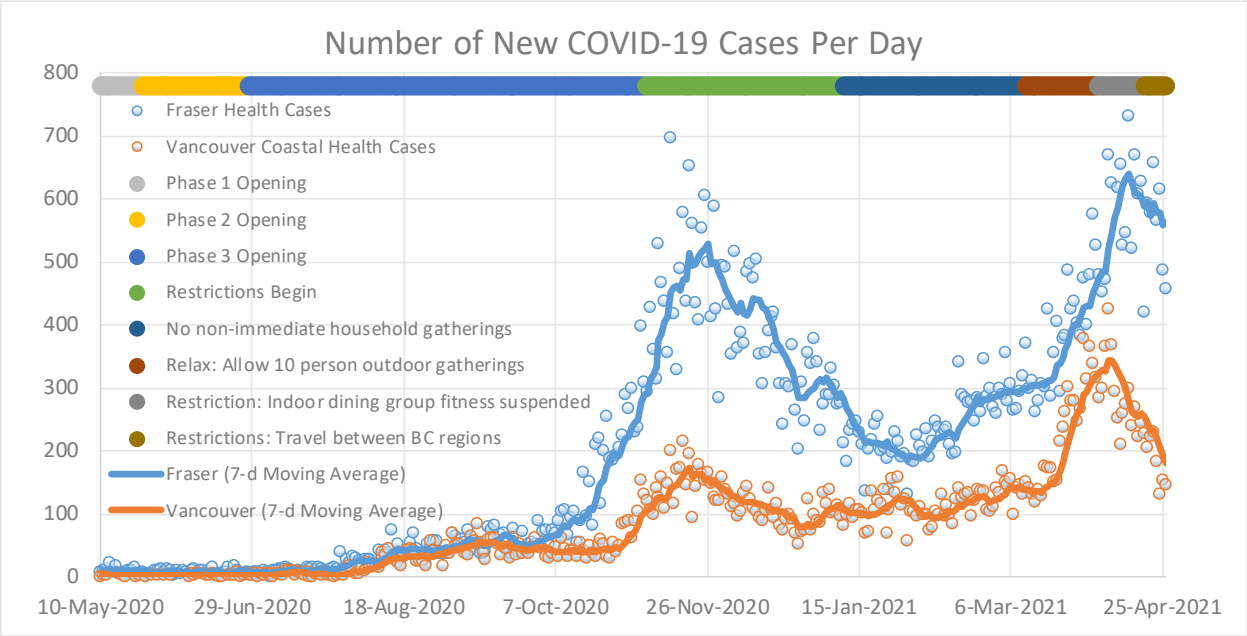


Figure 3 New clinical cases of COVID-19 by health authority[1], and timing of restrictions



1 data source BCCDC website. Note that the Fraser Health Authority region roughly includes the sewerage areas of Annacis Island and NW Langley WWTPs, but also includes areas to the east (e.g., Abbotsford), while Vancouver Coastal Health Authority region roughly includes the sewerage areas of Iona Island, Lions Gate and Lulu Island WWTPs, but also includes areas to the north (e.g., Sea-to-Sky, Sunshine Coast)

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

To: Zero Waste Committee

From: Larina Lopez, Division Manager, Corporate Communications, External Relations

Date: April 9, 2021 Meeting Date: May 14, 2021

Subject: **2021 Food Scraps Recycling Campaign Results**

RECOMMENDATION
That the Zero Waste Committee receive for information the report dated April 9, 2021, titled "2021 Food Scraps Recycling Campaign Results."

EXECUTIVE SUMMARY
The 2021 "Food Scraps Aren't Garbage" campaign ran from January 11 to March 7, 2021. The primary objective was to increase the diversion of organic waste into the green bin, and the approach built on the 2019 and 2020 campaigns by continuing to use the food face characters. New in 2021 was a secondary objective to reduce contamination overall, as well as an audience segment focused on multi-family residents. Hyper-targeted banner ads and a new webpage were used to address common confusing items. The Green Bin Q&A on Instagram Stories also returned in 2021. Performance was strong, with 43 million total impressions, 2.8 million reach, and over 30,000 website page views. The campaign will run again in early 2022.

PURPOSE
To update the Committee on the results of the 2021 regional food scraps recycling campaign, "Food Scraps Aren't Garbage."

BACKGROUND
The food scraps recycling (FSR) campaign is part of a suite of education, enforcement (policy) and engineering efforts by Metro Vancouver to reduce waste in the region. It supports the waste reduction objectives in the *Integrated Solid Waste and Resource Management Plan.* 2021 marked the eighth year of the FSR campaign. This report provides an update on the results of the 2021 FSR campaign as identified in the 2021 Zero Waste Committee Work Plan.

2021 REGIONAL FOOD SCRAPS RECYCLING CAMPAIGN
The 2021 "Food Scraps Aren't Garbage" campaign was in market from January 11 to March 7, 2021. The campaign strategy and approach built on the 2019 and 2020 campaigns. Classically recognized organics are still in the garbage in significant quantities, so the primary campaign objective was to increase the diversion of organic waste into the green bin. New in 2021 was a secondary objective to reduce contamination overall (by single-use items, plastic bags, plastics labelled "compostable" or "biodegradable," PPE, and other items). The audience was all Metro Vancouver residents, including a segment focused on multi-family residents, who have a lower diversion rate than single-family residents.

The primary message was "food scraps aren't garbage." The campaign leveraged the googly-eyed food face characters and creative from the past two years (see Attachment 1 for sample creative).

In 2019, the FSR campaign started to provide more specific information to help people understand why we compost and help alleviate confusion. This strategy has evolved year over year, and in 2021 a new webpage was added, "What to Do with Confusing Items" (Reference 1). Based on questions received in 2020 via social media and the Green Bin Q&A, the webpage featured disposal instructions for common green bin contaminants.

The paid media strategy leveraged both broad and targeted tactics, including television PSA (geo-targeted; 14 networks), transit shelter ads, bus sides, digital banner ads, Google Search, YouTube, social media (Facebook, Instagram, and Twitter), interactive Instagram Stories, and a branded content article in *Daily Hive*. All the placements directed to the campaign website (Reference 2).

Hyper-targeted banner ads were used to address contaminant items. These included coffee cups (targeted to people who had recently been in a coffee shop) and takeout containers (targeted to people who had recently been in a takeout restaurant) (Attachment 2).

A secondary message about plastic bag contamination was targeted to people who have previously searched for info about this topic via programmatic banner ads.

Elevator screens in condo buildings were used to reach the multi-family audience segment. They included messages to address the specific barriers to using the green bin for multi-family residents.

Green Bin Q&A

The Green Bin Q&A on Instagram Stories returned in 2021. This tactic addressed residents' need for specific information. It featured helpful experts from Metro Vancouver's Solid Waste Services department responding directly to questions from residents

During the Green Bin Q&A, people sent in their questions via interactive Instagram Stories, and Metro Vancouver staff answered the questions in short videos on Instagram Stories (Attachment 3). This created the opportunity to address specific questions and confusing items, like chopsticks, grease, and compostable food ware. The Green Bin Q&A videos were also used in paid media placements, which amplified their reach across the region.

Over the four Green Bin Q&As, 52 questions were asked by residents. Of these, 22 were answered on video and the rest were answered via direct message. The most common question topics included food-soiled paper, single-use takeout items, items labelled "compostable" or "biodegradable," and parchment / wax paper. There were also specific questions received multiple times, such as what to do with the wax on cheese, pet waste, and cooking oil / grease.

Engagement of Metro Vancouver Members

Campaign materials were made available to all Metro Vancouver members, including social media content and co-branded assets like transit shelter ads and digital message boards. Several members used the materials on their social media channels and throughout their municipalities.

Results

Website Traffic

- Over the campaign period, there were 30,815 page views, which is 550 per day. This is above the baseline of about 300 sessions / day, and indicates strong performance.
- Users spent on average 1:38 viewing a page, indicating that they were taking the time to read the content.
- Besides the landing page, the most popular pages were "What to Do with Confusing Items" and "What Goes in the Green Bin?" These pages were designed to answer specific questions that residents have, and the high amount of traffic and average time on page indicate that they are providing information that residents seek.
- Banner ads were the top source of website traffic, followed by organic and aid search.

Media Performance

- The campaign delivered nearly 43 million impressions.
- The broad traditional tactics delivered 31 million impressions across transit shelter ads, bus sides, and elevator screens.
- The targeted digital tactics delivered 11.5 million impressions, with a reach of 2.8 million.
- There were 1.5 million video views on social media.

Social Media Engagement

- Social media placements had a total reach of 976,331 people. There were 3,713 engagements (likes, comments, and shares). The videos performed well, with 346,161 views and a view rate of 29%.
- The Green Bin Q&A Instagram Stories reached 24,690 people organically, and 97,519 in the paid placements. The best performing Q&A was about plastic bags labelled "compostable."

A post-campaign survey was not conducted in 2021.

Plans for 2022 Regional Campaign

The campaign will run again in early 2022. It will continue to use the existing creative platform, as performance is strong. The target audience and key messages are to be determined, but will be based on insights from 2021's campaign and data from Solid Waste Services.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

The 2021 single-use item reduction campaign has a budget of $110,000, supported under the Zero Waste Communications Program of the 2021 General Government budget.

CONCLUSION

2021 was the eighth year of the "Food Scraps Aren't Garbage" campaign, which aims to increase diversion of organic waste into the green bin. The food faces creative platform was used once again in 2021, and specific tactics were added alleviate confusion and reduce contamination overall, including hyper-targeted banner ads, a new webpage called "What to Do with Confusing Items,"

and an interactive Green Bin Q&A. A segment targeting multi-family residents and their specific barriers was included. The campaign performed strongly, with 43 million total impressions, 2.8 million reach, and over 30,000 webpage visits. The campaign will run again in 2022, informed by learnings from 2021 and building on the long-term equity in the creative platform.

Attachments

1: "Food Scraps Aren't Garbage" Sample Creative
2: Hyper-Targeted Banner Ads
3: Green Bin Q&A Example

References

1. What to Do with Confusing Items
2. "Food Scraps Aren't Garbage" Website

44694944

"FOOD SCRAPS AREN'T GARBAGE" SAMPLE CREATIVE

Posters (All)

Apple

Red Pepper

Eggshell

Napkin

Grease

Pineapple

Onion Peel

Coffee Filter

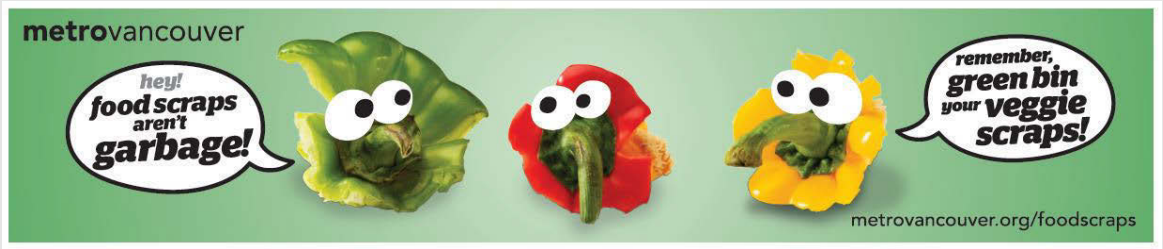
Chicken Bone

Chopsticks

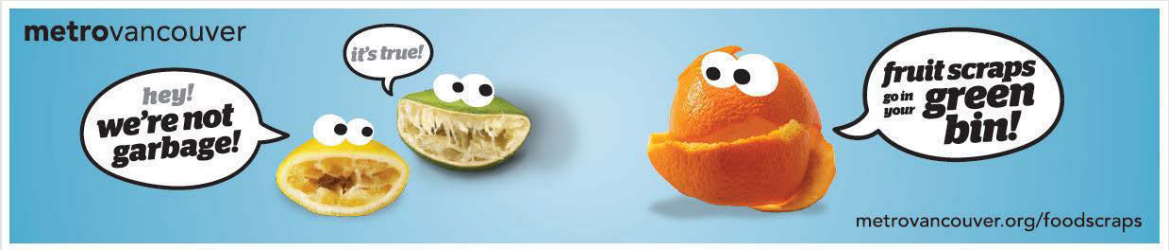
Transit Shelter Ad


metrovancouver
hey!
food scraps
aren't
garbage!
Green bin
your fruit
scraps!
metrovancouver.org/foodscraps

Bus Sides



Pepper



Citrus

Social Media Ads

Facebook

Facebook

Instagram

Instagram

Search Ads

What Goes in the Green Bin? | Metro Vancouver | Green Bin Tips
Ad www.metrovancouver.org/
Don't be confused by composting. Find out what goes in your green bin. Food-soiled paper can help prevent odours.

Food Scraps Aren't Garbage | Metro Vancouver
Ad www.metrovancouver.org/
What waste should go in the green bin? Learn more about what can be collected. Composting doesn't have to be a chore.

Smelly green bin? | Metro Vancouver
Ad www.metrovancouver.org/
Food-soiled paper can help prevent odours. Get more storage tips. Don't be confused by composting. Find out what goes in your green bin.
Composting 101 · Food Scraps Recycling · Make It Easy · Keep It Clean

HYPER-TARGETED BANNER ADS

Version 1: Cups (Mobile Example)

Frame 1

Frame 2

Frame 3

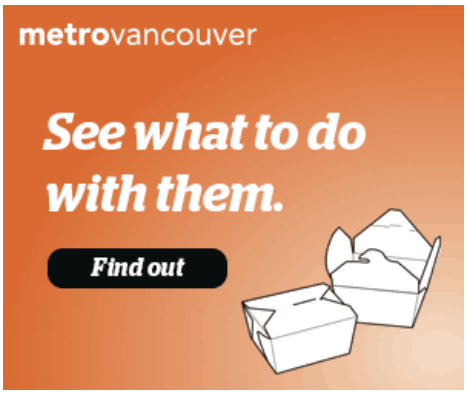
Frame 4

Version 2: Containers (Desktop Example)

Frame 1

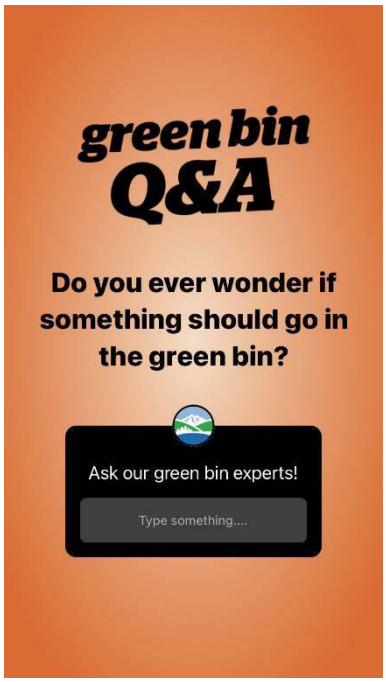
Frame 2

Frame 3



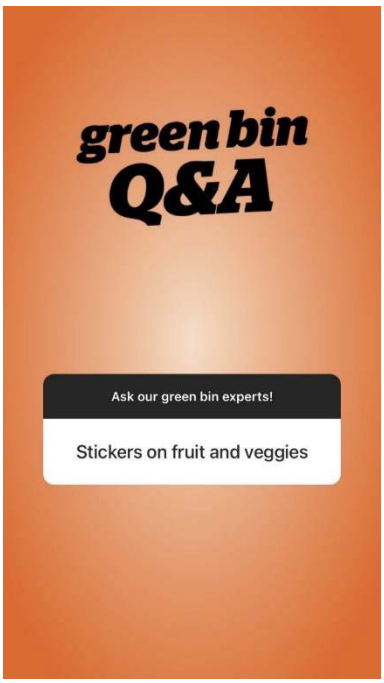
GREEN BIN Q&A EXAMPLE

Frame 1

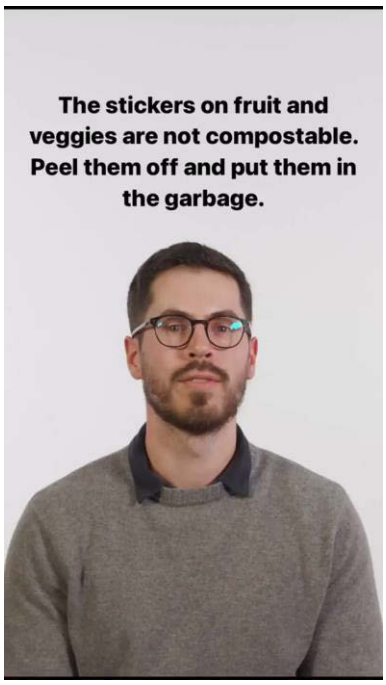


Frame 2: Interactive Form

Frame 3



Frame 4: Question from Resident



Frame 5: Answer Video

Frame 6