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**Public Works and Transportation Committee  
Electronic Meeting**

**Council Chambers, City Hall  
6911 No. 3 Road**

**Wednesday, October 18, 2023  
4:00 p.m.**

Pg. #      ITEM

**MINUTES**

**PWT-5**      *Motion to adopt the **minutes** of the meeting of the Public Works and Transportation Committee held on September 13, 2023.*



**NEXT COMMITTEE MEETING DATE**

November 22, 2023, (tentative date) at 4:00 p.m. in the Council Chambers.

**AGENDA ADDITIONS AND DELETIONS**

**PLANNING AND DEVELOPMENT DIVISION**

- 1. STEVESTON TRANSIT EXCHANGE UPDATE: ALTERNATE LAYOUT**  
(File Ref. No. 10-6500-01) (REDMS No. 7257420)

**PWT-9**

**See Page PWT-9 for full report**

*Designated Speaker: Sonali Hingorani*

STAFF RECOMMENDATION

*That the proposal to relocate transit circulation and layover areas further west on Chatham Street between Fourth and Seventh Avenues as described in the report titled “Steveston Transit Exchange Update: Alternate Layout” dated October 3, 2023 from the Director, Transportation, be received for information.*



ENGINEERING AND PUBLIC WORKS DIVISION

2. **COMMERCIAL RECYCLING SERVICES REVIEW**

(File Ref. No. 10-6370-01) (REDMS No. 7358334)

PWT-15

See Page PWT-15 for full report

*Designated Speaker: Kristina Nishi*

STAFF RECOMMENDATION

- (1) *That Option 2, as outlined in the staff report titled “Commercial Recycling Services Review” dated September 12, 2023 be endorsed; and*
- (2) *That staff prepare amendments to the Solid Waste and Recycling Regulation Bylaw No. 6803 to remove commercial service options.*



3. **PESTICIDE REDUCTION AND INVASIVE SPECIES MANAGEMENT – 2023 UPDATE**

(File Ref. No. 10-6160-07-01) (REDMS No. 7349072)

PWT-44

See Page PWT-44 for full report

*Designated Speaker: Chad Paulin*

STAFF RECOMMENDATION

*That outcomes related to the City’s Enhanced Pesticide Management Program and Invasive Species Action Plan, as outlined in the staff report titled “Pesticide Reduction and Invasive Species Management – 2023 Update” dated September 19, 2023, from the Director, Sustainability and District Energy be received for information.*



4. **PROPOSED 2024 PAVING PROGRAM**

(File Ref. No. 10-6000-01) (REDMS No. 7370815)

PWT-60

See Page PWT-60 for full report

*Designated Speaker: Kevin Roberts*

STAFF RECOMMENDATION

*That the staff report titled, “Proposed 2024 Paving Program,” dated September 14, 2023, from the Director, Engineering be received for information.*



5. **SAFETY MEASURES FOR HEAVY TRUCKS**

(File Ref. No. 10-6000-01) (REDMS No. 7323952)

PWT-68

See Page PWT-68 for full report

*Designated Speaker: Owen Sinclair*

STAFF RECOMMENDATION

*That staff report titled “Safety Measures for Heavy Trucks”, dated September 20, 2023, from the Director, Public Works Operations and Director, Transportation be received for information.*



6. **IONA ISLAND WASTEWATER TREATMENT PLANT – UPDATE SEPTEMBER 2023**

(File Ref. No. 10-6060-01) (REDMS No. 7388562)

PWT-74

See Page PWT-74 for full report

*Designated Speaker: Manraj Gill*

STAFF RECOMMENDATION

*That the proposed comments for the use of barges as the primary mode of transportation for construction materials and equipment for the Iona Island Wastewater Treatment Plant Upgrade project, as outlined in the staff report titled “Iona Island Wastewater Treatment Plant – Update September 2023,” dated September 22, 2023 from the Director, Engineering be endorsed for submission to Metro Vancouver.*



7. **UBCM COMMUNITY EMERGENCY PREPAREDNESS FUND:  
2023/24 DISASTER RISK REDUCTION – CLIMATE ADAPTATION  
GRANT APPLICATION**

(File Ref. No. 10-6060-01) (REDMS No. 7349699)

PWT-92

See Page PWT-92 for full report

*Designated Speakers: Manraj Gill & Eric Sparolin*

**STAFF RECOMMENDATION**

- (1) *That the application to the Community Emergency Preparedness Fund, Disaster Risk Reduction – Climate Adaptation funding stream as outlined in the staff report titled “UBCM Community Emergency Preparedness Fund: 2023/24 Disaster Risk Reduction – Climate Adaptation Grant Application” dated September 13, 2023 from the Director, Engineering be endorsed;*
- (2) *That should the grant application be successful, the Chief Administrative Officer and the General Manager, Engineering and Public Works, be authorized on behalf of the City to negotiate and execute funding agreements with UBCM for the above mentioned projects; and*
- (3) *That should the grant application be successful, capital projects of \$150,000 for the Nature-Based Flood Protection Solutions Assessment, \$150,000 for Emergency Flood Protection Equipment, and \$2,500,000 for Dike Rehabilitation be approved with funding from the external grant, as outlined in the staff report titled “UBCM Community Emergency Preparedness Fund: 2023/24 Disaster Risk Reduction – Climate Adaptation Grant Application” dated September 13, 2023 from the Director, Engineering, and be included in the Consolidated 5 Year Financial Plan (2024-2028) accordingly.*



8. **MANAGER’S REPORT**

**ADJOURNMENT**





## Public Works and Transportation Committee

Date: Wednesday, September 13, 2023

Place: Council Chambers  
Richmond City Hall

Present: Councillor Carol Day, Chair  
Councillor Michael Wolfe (by teleconference)  
Councillor Chak Au  
Councillor Kash Heed  
Councillor Alexa Loo (by teleconference)

Also Present: Councillor Bill McNulty  
Councillor Andy Hobbs (by teleconference)

Call to Order: The Chair called the meeting to order at 4:31 p.m.

### MINUTES

It was moved and seconded

*That the minutes of the meeting of the Public Works and Transportation Committee held on July 19, 2023, be adopted as circulated.*

**CARRIED**

### ENGINEERING AND PUBLIC WORKS DIVISION

1. **LOCAL GOVERNMENT CLIMATE ACTION PROGRAM (LGCAP)  
YEAR 2 SURVEY REPORT AND 2021 / 2022 CORPORATE  
EMISSION INVENTORIES**  
(File Ref. No. 10-6125-05-01) (REDMS No. 7247859)

## Public Works & Transportation Committee

### Wednesday, September 13, 2023

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In response to queries from Committee, staff advised that (i) staff will provide Committee with a memorandum with information regarding the job titles of the staff dedicated to working on climate action, (ii) lack of jurisdiction is highlighted as one of the top challenges to impeding the advancement of climate action, (iii) addition of the retrofit code into the building code will increase local government jurisdiction, (iv) staff are working with the Building Safety Standards Branch to have a retrofit plan ready by the end of 2024, (v) the City of Richmond relies on the Province's Community and Energy Emission Inventory to measure the community wide GHG emissions, (vi) the City plans to create their own inventory using CEEI protocols to report on 2022 emissions, and (vii) approximately \$566,000 received by the City in 2022 was put into a reserve fund, through Council direction that money was allocated to create two new positions to focus on climate action with the Community Energy Emissions Plan.

It was moved and seconded

*That as described in the report titled "Local Government Climate Action Program (LGCAP) Year 2 Survey Report and 2021 / 2022 Corporate Emission Inventories" from the Director, Sustainability and District Energy, dated August 28, 2023:*

- (1) The LGCAP Year 2 Survey Report and Attestation Form be endorsed and posted on the City's website for public information, in accordance with Provincial requirements;*
- (2) A funding application to the Federation of Canadian Municipalities be submitted in the amount of \$200,000 for undertaking a GHG Reduction Pathway Feasibility Study for civic facilities;*
- (3) The Chief Administrative Officer and General Manager, Engineering and Public Works, be authorized to enter into a funding agreement with Federation of Canadian Municipalities, should the funding agreement be successful; and*
- (4) The Consolidated 5 Year Financial Plan (2023-2027) be amended to include the GHG Emission Pathway Feasibility Study in the amount of \$525,000, which will be funded from the Energy Operating Provision Account for \$325,000 and an additional \$200,000 contingent upon confirmation from the Federation of Canadian Municipalities.*

**CARRIED**

## Public Works & Transportation Committee

Wednesday, September 13, 2023

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### 2. **CAMBIE ROAD OVERPASS REPAIR**

(File Ref. No. 10-6000-01) (REDMS No. 7328755)

In response to queries from Committee, staff advised that (i) the repairs will involve keeping the existing alignment and structure and only replacing what was damaged, and (ii) the damage caused by the commercial dump truck was mostly to the sidewalk and signage hanging over the bridge.

It was moved and seconded

*That funding of \$1,400,000 from the MRN Rehabilitation Provision for the Cambie Road Overpass repair be approved and that the Consolidated 5 Year Financial Plan (2023-2027) be amended accordingly, as detailed in the report titled "Cambie Road Overpass Repair" dated August 4, 2023, from the Director, Engineering.*

**CARRIED**

### 3. **MANAGER'S REPORT**

#### *(i) Steveston Highway Multi-Use Pathway*

Construction of the multi-use pathway began in late August with work starting at Shell Road and working west towards No 2 Road. The anticipated completion of the project is late summer 2024 with construction being sequenced in five stages. Current works include replacing the eastside bound lane on Steveston Highway between Shell Road and No. 4 Road.

#### *(ii) Solar Powered Driver Feedback Signage*

Signage has been installed on Odlin Road near the Alexandra neighborhood park and Thompson Elementary School. A solar powered new pedestrian activated overhead special crosswalk has been installed on Williams Road and Leonard Road

#### *(iii) Update on the New Steveston Interchange Project-*

Construction is on-going on the Steveston Interchange project. Current activities in the area include: preload work, earth work and utility relocation. The project is on track for completion for 2025.

#### *(iv) Massey Tunnel Project Update*

The project is in the procurement phase. The Environmental Assessment Officer's readiness decision is forthcoming, after which the formal environmental assessment process for this project will commence. The project is on track for completion in 2030.

**Public Works & Transportation Committee**  
**Wednesday, September 13, 2023**

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*(vi) YVR follow up regarding bike lane*

Staff will follow up with YVR to get a status update on the projects YVR has indicated they will be initiating to increase bicycle safety in the bike lane leading up to No. 2 Rd Bridge.

*(vii) Cambie Road and No. 5 Road Project*

Staff are working with the school district to get a temporary access agreement in place while they prepare to propose a permanent agreement.

**ADJOURNMENT**

It was moved and seconded

*That the meeting adjourn (4:54 p.m.).*

**CARRIED**

Certified a true and correct copy of the Minutes of the meeting of the Public Works and Transportation Committee of the Council of the City of Richmond held on Wednesday, September 13, 2023.

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Councillor Carol Day  
Chair

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Raman Grewal  
Legislative Services Associate





# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee  
**From:** Lloyd Bie, P.Eng.  
Director, Transportation  
**Date:** October 3, 2023  
**File:** 10-6500-01/2023-Vol  
01  
**Re:** Steveston Transit Exchange Update: Alternate Layout

### Staff Recommendation

That the proposal to relocate transit circulation and layover areas further west on Chatham Street between Fourth and Seventh Avenues as described in the report titled "Steveston Transit Exchange Update: Alternate Layout" dated October 3, 2023 from the Director, Transportation, be received for information.

Lloyd Bie, P.Eng.  
Director, Transportation  
(604-276-4131)

Att. 1

| REPORT CONCURRENCE                |                                     |                                       |
|-----------------------------------|-------------------------------------|---------------------------------------|
| <b>ROUTED TO:</b>                 | <b>CONCURRENCE</b>                  | <b>CONCURRENCE OF GENERAL MANAGER</b> |
| Parks Services                    | <input checked="" type="checkbox"/> |                                       |
| Real Estate Services              | <input checked="" type="checkbox"/> |                                       |
| Policy Planning                   | <input checked="" type="checkbox"/> |                                       |
| Engineering                       | <input checked="" type="checkbox"/> |                                       |
| <b>SENIOR STAFF REPORT REVIEW</b> | <b>INITIALS:</b>                    | <b>APPROVED BY CAO</b>                |
|                                   |                                     |                                       |

## **Staff Report**

### **Origin**

At the July 8, 2019 regular Council meeting, the following referral was carried:

*That with respect to TransLink's planned upgrade of the Steveston Transit Exchange as identified in Phase Three of the Mayors' Council 10-Year Investment Plan:*

- (1) TransLink be advised that the City does not support a location within Steveston Community Park as part of the Steveston Community Centre and Branch Library Replacement Project; and*
- (2) That staff be directed to review other possible locations for the Steveston Transit Exchange including at 4320 Moncton Street or elsewhere in Steveston;*

This report responds to Part (2) of the referral. Staff have already addressed the 4320 Moncton Street site and part (1) of the referral.

This report supports Council's Strategic Plan 2022-2026 Focus Area #2 Strategic and Sustainable Community Growth:

*2.1 Ensure that Richmond's targeted OCP update shapes the direction and character of the City.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #6 A Vibrant, Resilient and Active Community:

*Vibrant, resilient and active communities supported by a wide variety of opportunities to get involved, build relationships and access resources.*

*6.1 Advance a variety of program, services, and community amenities to support diverse needs and interests and activate the community.*

### **Analysis**

#### **Existing Steveston Transit Exchange Location**

The current Steveston Transit Exchange is an on-street transit facility with bus functions (drop-off/pick-up and layover) occurring on Chatham Street (Attachment 1). There are five bus routes that connect Steveston Village to various parts of Richmond and the region. These routes terminate in Steveston Village and buses layover at on-street stops along Chatham Street between First and Fourth Avenues.

Operational issues with the existing on-street transit exchange continue to persist with the primary complaints arising near Second Avenue where buses park for scheduling purposes and operator breaks.

### Steveston Transit Exchange – Alternate Layout

TransLink has explored properties in Steveston Village to locate an off-street transit exchange. Sites with the scale to satisfy the footprint required for transit operations are scarce in Steveston Village and TransLink has not been able to secure an off-street location for transit purposes.

Staff have met with TransLink to discuss an alternative on-street location option for use until an off-street location becomes available. The focus of the discussions has been on a short-to medium-term solution to address the ongoing operational issues with the existing layover location of buses on Chatham Street.

TransLink, in consultation with staff, have investigated relocating the on-street transit exchange further west on Chatham Street to address community concerns and improve the current conditions.

The alternate on-street location for the exchange is described below.

#### *Alternate On-Street Steveston Transit Exchange: Chatham Street West of Fourth Avenue*

The proposed alternative for the on-street bus exchange relocates all layover positions to the south side of Chatham Street between Fourth and Sixth Avenues. This will relocate parked buses away from the area of concern near Second Avenue. Active bus stops will remain on Second Avenue to permit passenger loading and unloading activity only. For repositioning, buses will predominantly require travelling southbound on Seventh Avenue, eastbound on Moncton Street and northbound on Sixth Avenue instead of using the streets north of Chatham Street.

The proposed alternative Steveston Transit Exchange layout is shown in Figure 1.



Figure 1: *Alternate On-Street Steveston Transit Exchange: Chatham Street West of Fourth Avenue*

Considerations for the alternate Steveston Transit Exchange layout are summarized in Table 1.

Considerations for the alternate Steveston Transit Exchange layout are summarized in Table 1.

**Table 1: Considerations for Alternate Steveston Transit Exchange Layout**

| Advantages   | Disadvantages  |
|--|--|
| <ul style="list-style-type: none"> <li>• Bus turnarounds occurring on Sixth and Seventh Avenues in the relatively less busy part of Steveston Village.</li> <li>• A significant reduction in the number of buses traveling on Fourth Avenue for repositioning.</li> <li>• Bus stops near Second Avenue become active stops only for drop off and pick up of passenger. No layover positions.</li> <li>• Fewer residents fronting bus circulation route.</li> <li>• Improved transit access with new bus stop at Seventh Avenue.</li> <li>• Shortened bus circulation and increased efficiency and reliability for all routes.</li> <li>• Frontage length supports future bus route expansion.</li> </ul> | <ul style="list-style-type: none"> <li>• Some active bus stops shift further west on Chatham Street, which may be less convenient for transit users.</li> <li>• Introduction of bus circulation on Sixth and Seventh Avenues adjacent to existing multi-family residential units.</li> <li>• Net loss of street parking on Chatham Street (10 spaces).</li> <li>• Temporary operator's washroom located on street frontage.</li> </ul> |

The parking and temporary operator facility considerations are described below.

#### *Chatham Street Parking*

A total of 27 parking stalls on the south curb of Chatham Street between Fourth and Sixth Avenues will be impacted with the proposed alternate transit layout. As the existing bus layover positions near Second Avenue will be removed, 17 new parking spaces can be created on Chatham Street closer to the Steveston Village core between First and Fourth Avenues. The net loss of ten parking spaces on Chatham Street will be outside the periphery of the Village core. This is considered a manageable amount as the parking that will be gained is located closer to Steveston businesses on the section of Chatham Street that experiences higher parking demand.

#### *Temporary Transit Operator Facility*

The temporary operator's washroom will be a purpose-built amenity building located in the boulevard space between the south curb and the existing sidewalk on Chatham Street. As details and renderings become available for this facility, staff will provide updates to Council. The design objective is to develop the temporary washroom in an architecturally pleasing manner and will be removed once the longer-term off-street transit exchange is developed.

#### Next Steps

TransLink plans to conduct public engagement on the proposed layout of the Steveston Transit Exchange in fall 2023.

TransLink's engagement plan includes digital and in-person activities:

- Project information and a feedback form on TransLinkListens.ca.
- An in-person information session at a community location.
- Direct engagement with residents and businesses closest to the proposed route.

Promotion of engagement opportunities include a postcard mail out, print and digital ads and TransLink social media content.

Staff will advise Council on the timing for consultation once TransLink confirms the dates and will report back regarding the outcome of the public and stakeholder engagement phase.

### **Financial Impact**

None.

### **Conclusion**

An off-street Steveston Transit Exchange has been challenging for TransLink to locate given the scarcity of appropriately sized parcels in Steveston Village. Staff have engaged TransLink to identify a short-to medium-term on-street solution. TransLink has developed a proposal for the potential relocation of the Steveston Transit Exchange to address existing operational concerns near Chatham Street and Second Avenue. The alternate transit exchange layout positions all bus layover bays along the south curb of Chatham Street between Fourth and Sixth Avenues with bus turnaround on Sixth and Seventh Avenues via Moncton Street. TransLink is planning to conduct public consultation in fall 2023.

Staff will provide an update to Council on the outcome of TransLink's consultation on the alternate layout of the on-street Steveston Transit Exchange anticipated in Q1 2024.

*Sonali Hingorani*

Sonali Hingorani, P.Eng.  
Manager, Transportation Planning and New Mobility  
(604-276-4049)

SH:ck

Att. 1: Existing Steveston Transit Exchange



## Existing Steveston Transit Exchange



Existing On-street Bus Positions



Existing Bus Routes and Circulation



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee

**Date:** September 12, 2023

**From:** Suzanne Bycraft  
Director, Public Works Operations

**File:** 10-6370-01/2023-Vol  
01

**Re:** Commercial Recycling Services Review

### Staff Recommendations

1. That Option 2, as outlined in the staff report titled "Commercial Recycling Services Review" dated September 12, 2023 be endorsed.
2. That staff prepare amendments to the *Solid Waste and Recycling Regulation Bylaw No. 6803* to remove commercial service options.

Suzanne Bycraft  
Director, Public Works Operations  
(604-233-3338)

Att. 1

| REPORT CONCURRENCE                 |               |
|------------------------------------|---------------|
| CONCURRENCE OF GENERAL MANAGER<br> |               |
| SENIOR STAFF REPORT REVIEW         | INITIALS:<br> |
| APPROVED BY CAO<br>                |               |

## Staff Report

### Origin

This report provides information on the Commercial Recycling Services Review, approved by Council on February 25, 2019 as part of the 2020 Utility Budget and Rates Report.

This report supports Council's Strategic Plan 2022-2026 Focus Area #5 A Leader in Environmental Sustainability:

*Leadership in environmental sustainability through innovative, sustainable and proactive solutions that mitigate climate change and other environmental impacts.*

*5.1 Continue to demonstrate leadership in proactive climate action and environmental sustainability.*

### Analysis

#### Background

The Commercial Recycling Services Review was undertaken during 2022 and 2023, delayed from 2020 due to COVID-19 impacts to business. The purpose of this review is to identify a strategy for options to increase recycling performance of commercial businesses. This sector is challenging due to considerable variations in the types of waste generated by business as well as cost factors associated with recycling.

The City of Richmond is a leader in diverting waste from landfill, achieving a 79% diversion rate from single-family homes in 2022. This is in large part due to the many City initiatives which Council has endorsed over the years to support sustainable waste management and recycling in the community. However, according to data provided by the 2021 Metro Vancouver Recycling and Solid Waste Management Summary, the regional commercial recycling rate of 46% is behind the overall regional recycling rate of 65%. To better understand this gap, the City undertook a Commercial Recycling Services Review to look at the current state of commercial recycling in Richmond and how the City can best support increased recycling in the commercial sector.

There are several City programs and initiatives already in place that affect commercial garbage and recycling, examples are highlighted below:

- **City Pilot for Commercial Garbage and Recycling Services:** Under the *Solid Waste and Recycling Regulation Bylaw No. 6803*, the City launched a Commercial Garbage and Recycling Collection Pilot in 2015. Though not currently accepting new businesses, 54 commercial customers subscribe to on-site collection services.
- ***Solid Waste and Recycling Regulation Bylaw No. 6803*:** Requires non-residential and commercial businesses to remove all garbage generated from such property as often as necessary.
- **Richmond Recycling Depot:** The Recycling Depot (Depot) accepts a number of recyclable items from businesses. Businesses are permitted to drop-off up to one cubic



yard of acceptable material for free, excluding yard trimmings and upholstered furniture which require fees for business.

- **Commercial and Multi-Family Waste Management Guidelines:** The City of Richmond recommends that all commercial, multi-family and mixed-used developments have adequate storage for garbage and recycling receptacles. At the building planning stage, City staff review plans to ensure the allocation of space for garbage and recycling rooms/receptacles is sufficient to meet the capacity of the building.
- ***Demolition Waste and Recyclable Materials Bylaw No. 9516:*** Requires demolition materials to be taken to a licensed recycling facility or reuse site. A building permit must be obtained by the agent of a one or two-family dwelling for any work planning to be completed. Part of the permit includes a completed waste disposal and recycling services plan related to the disposal and reuse of recyclable materials.

### Regulatory and Service Review

In order to gain greater perspective on the current state of commercial garbage and recycling in Richmond, staff first conducted a jurisdictional scan and review of federal, provincial, regional and other municipal regulations that may impact business. It is important to note that Richmond businesses are required to ensure proper disposal of garbage generated on their property, but are not required by any level of government to have recycling collection. The Business Engagement Summary Report presented as Attachment 1 provides a summary of each level of government's authority to regulate commercial garbage and recycling in the Jurisdictional Review section.

In addition to the jurisdictional review, staff conducted a service review comparing waste removal models, regulatory structures and service payment models currently being utilized in select cities throughout North America. Staff have found that there are generally four service models offered: an opt-in City service, franchised with a single hauler, franchised with dedicated haulers for multiple zones, and required waste management diversion plans. The opt-in City service is the most similar to the City's Pilot Commercial Garbage and Recycling service. Details of each model are provided in Attachment 1 in the Service Model Review section.

Currently, as per Bylaw 6803, Richmond commercial businesses and property managers must source and contract garbage collection services through private waste haulers. Businesses may then determine which recycling services are required based on the materials generated by each business.

### Consultation: What We Heard

The engagement strategy was developed according to stakeholder type as outlined below:

- Richmond Businesses
- Business Associations and Professional Associations
- Property Managers
- Waste Haulers

Details of each stakeholder consultation can be found in Attachment 1 in the Stakeholder Key Themes section. Key findings are summarized below.

*Consultation with Businesses:*

Staff began surveying businesses to review current waste management and recycling practices, and identify any challenges commercial businesses may encounter regarding sound waste management practices. The reception to the survey was positive and businesses appreciated the City's attention to supporting increased recycling.

Staff approached a total of 345 businesses throughout Richmond to participate in in-person, phone and online surveys with 113 responding to the survey.

The majority of businesses indicated they:

- were very satisfied with their recycling and garbage services;
- encountered frequent challenges with illegal dumping;
- are deterred by the cost of garbage and recycling collection;
- have limited space for additional bins; and
- were aware of Metro Vancouver disposal bans and the City's *Single-Use Plastic and Other Items Bylaw No. 10000*.

Feedback included:

- ideas on how the City could support increased recycling by educating businesses and building management on how to recycle correctly;
- requiring businesses to recycle; and
- increasing outreach for school-aged children and the public.

*Consultation with Business Associations and Professional Associations:*

Staff invited Richmond business associations and representatives to participate in a facilitated workshop and targeted one-on-one meetings to expand on the themes identified through consultation with businesses.

While there are common challenges and opportunities, there are also specific concerns that affect different commercial sectors as there is no one-size-fits-all solution. Top concerns identified are:

- illegal dumping;
- the cost and space required for additional bins; and
- the inconsistency of recycling programs between residential and businesses.

Opportunities identified were:

- a need to address language barriers; and
- an interest in increased education and awareness that could provide training and onboarding resources.

*Consultation with Property Managers:*

Staff reached out to eight commercial property managers of mini-mall complexes in Richmond and spoke to three, who represented five mini-mall complexes. Common feedback received included:

- property managers provide garbage, cardboard and some organics recycling to tenants;
- additional services have to be arranged by the business or they must dispose of items themselves;

- reducing contamination is dependent on employees recycling correctly, thus education around proper recycling practices is needed; and
- the most prominent challenge is the issue of household garbage and large items being illegally dumped in their bins.

*Consultation with Waste Haulers:*

Staff reached out to eight individual waste haulers operating in Richmond and throughout the Lower Mainland as well as the Waste Management Association of BC (WMABC) to gain perspective on commercial recycling. Of the eight approached, staff conducted one-on-one interviews with three haulers and the WMABC. Haulers were initially hesitant to provide feedback, unsure of the type of insight they may be able to provide, however as conversations progressed, helpful information was shared.

Most waste haulers aim to drive sales and offer a complete package of garbage, recycling and organics services to any prospective business regardless of business size or waste generated.

*Waste haulers and the WMABC support:*

- increased education for businesses about recycling services available, ways to reduce contamination;
- how improved waste diversion practices can positively impact businesses bottom line and;
- all waste haulers recommended that the City of Richmond not get involved in the commercial waste hauling business.

Options

There are a number of avenues the City could use to further support the garbage and recycling efforts of commercial businesses in Richmond. Options for Council consideration are summarized below:

*Option 1: Regulate commercial recycling under Solid Waste and Recycling Regulation Bylaw No. 6803 (not recommended):* Under this option, the *Solid Waste and Recycling Regulation Bylaw No. 6803* would be amended to require businesses to submit a ‘waste disposal and diversion plan’ when applying for or renewing business licences with the City. This option could be modeled after the City of Vancouver’s process, wherein City staff would require that a ‘waste disposal and diversion plan’ be submitted to the City by all commercial businesses at the time of business license application or renewal for review and approval.

Option 1 is not recommended as this requirement would slow down the business license approval process, and put additional burden on smaller businesses who may not have the resources to develop a ‘waste disposal and diversion plan.’

*Option 2: Pilot a Business Education and Advisory Program; Discontinue Commercial Garbage and Recycling Services (recommended):* Under this option, rather than provide collection services to business, the City would instead develop and pilot a Business Education and Advisory Program (the Program). The Program would operate at no cost to business and include Phases 1 and 2 as outlined below.

The existing City Commercial Garbage and Recycling Pilot program would be discontinued for the 54 commercial contracts under this option, and staff would bring forward appropriate amendments to Solid Waste and Recycling Regulation Bylaw 6803. This recommendation is based on feedback received from the consultation process. Further, if this program were to be formalized, it would require negotiation with pre-existing collection contracts to include and allow for the collection of commercial garbage and recycling materials.

**Phase 1: Develop and Implement the Business Education and Advisory Pilot Program**

This phase will include the development and implementation of the Business Education Toolkit, Business Advisory Program and a specific communications campaign. Details of each section are outlined below.

- 1) Develop Business Education Toolkit to include:
  - a. Information on services available on the market for waste collection
  - b. Information on how to develop a waste disposal and diversion plan
  - c. Best practices for sustainable operations and how to reduce contamination
  - d. Provide resources for alternatives to single-use items
  - e. Build interest in circular economy innovation including sharing, refill and reusable options available in the marketplace
- 2) Develop and implement a Business Advisory Program to include:
  - a. Onsite waste assessments provided by City staff to review the type of waste being generated and current garbage and recycling systems in place
  - b. Hands-on coaching on how to create specific waste disposal and diversion plans, set up garbage and recycling rooms, and contract a hauler to meet their specific business needs
  - c. Onsite/virtual tutorials and workshops to train employees in commercial businesses
  - d. Ongoing point of contact for education and resources
  - e. Encouraging businesses and non-profits to incorporate sharing and reuse opportunities such as refill and reusable container programs.
- 3) Communication campaign for Business Education and Advisory Program:
  - a. News Release
  - b. City e-newsletters
  - c. Bill insert in business license renewals letter
  - d. City website
  - e. Direct communication through professional associations
  - f. Communications through the business licensing process

**Phase 2: Evaluation of the Business Education and Advisory Pilot Program**

This phase will include further engagement with the business community to review and determine Program uptake, effectiveness, and overall feedback from the business community. This phase will be conducted upon completion of a full year of Program implementation to determine overall effectiveness and feasibility of continuing this service model.

Upon review and evaluation, staff will report back to Council with recommendations on formalization of the Program.

### **Financial Impact**

The cost of the recommended approach can be accommodated within the current funding allocation of \$360,000. As this amount is offset from provision, it does not impact the rates charged to residents. This funding level is recommended to be maintained as a part of the 2024 Utility Budget and Rates.

### **Conclusion**

This report presents a review of the current state of commercial garbage and recycling in Richmond, and proposes the development and implementation of the Business Education and Advisory Program, on a pilot basis. The Program will provide hands-on support for businesses to navigate commercial waste management and empower businesses to implement sustainable recycling solutions.



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KN:

Att. 1: Engagement Summary Report



City of Richmond  
Commercial Recycling Services Review

# Business Engagement Summary Report

## SITUATION ANALYSIS

Studies show that commercial recycling rates (44%) are consistently lower than the overall regional recycling rate (64%). The City of Richmond (the City) would like to gain a better understanding of current challenges and how it can support improved recycling across the various commercial sectors as an integral part of supporting a circular economy. This would help to achieve both the *Richmond Circular City Strategy* and its *Community Energy Emissions Plan* objectives to reduce GHGs and support a circular economy. The need for improved commercial recycling was also identified by residents as part community engagement for the ban on single-use plastic and through the Rethink Waste Think Tank.

The review included several phases to gain insight into current service levels (types of services, collection frequency, what is working well), the challenges or barriers that prevent different business sectors from improving and expanding their recycling and opportunities to improve recycling quantity and quality.

The outreach targeted a cross-section of commercial businesses including restaurants, retail stores, entertainment businesses, grocery stores, medical offices, the hospitality sector, the health sector and education facilities. The project also included a review of how commercial recycling is managed in other jurisdictions, and an analysis of the legislation and regulations currently in place at federal, provincial, regional and local levels.

The overall outcomes for the review are to identify potential options to support increased commercial recycling in Richmond. This may include exploring options for how the City can help foster better recycling in the commercial sector.

This business engagement summary report includes the recycling site review summary and research on jurisdictions and regulations provided by Dillon Consulting as well as the key themes and information shared through workshops and targeted outreach coordinated by the City.

## TARGETED AUDIENCES

The following are the primary audiences for the commercial recycling services review as they are directly involved either in providing or using recycling services. The percentages are approximate to show the relative mix of businesses in the community that generate commercial waste and recycling (as opposed to industrial waste). The outreach to businesses aligned with the representation of the various business operations in the community, with a greater proportion of outreach to the retail, restaurant and hospitality sectors as the largest representative groups.

- Commercial business operators – with focus on primary waste producers:
  - Restaurants
  - Hospitality/entertainment sector
  - Retail operations
  - Grocery
  - Medical offices
  - Industrial/office sector



- Business organizations
  - Chamber of Commerce
  - Hotel Association
  - Tourism Richmond
  - Steveston Merchants' Association
  - Asian Restaurant Association
- Commercial recycling haulers
- Waste Management Association of BC
- Commercial recycling associations/companies
  - Green Circle Salons
  - Target Zero Waste
- Health Care Sector
  - Vancouver Coastal Health (includes hospitals and care homes)
  - BC Dental Association
  - BC Chiropractic Association
  - BC Naturopathic Association
  - ACTMA – BC Association of Traditional Chinese Medicine and Acupuncture Practitioners
  - BC Pharmacy Association
  - BC Association of Laboratory Physicians

## OBJECTIVES

The following are the primary objectives for the community engagement process related to commercial garbage and recycling services:

- Gain insight into current commercial recycling services in terms of how well they are working (e.g., quality and amount of recycling, actually recycling materials through processing facilities, safe handling), who is providing the services, current practices, capacity and challenges/limitations in the waste hauling industry
- Identify business concerns related recycling/sustainable waste management – barriers, challenges, issues related to how recycling is handled worldwide, environmental impacts
- Identify potential options for service solutions that support improved quality (correctly sorted, signage) and consistency of commercial recycling, including potential for City to foster increased recycling, including City's role as a regulator
- Identify concerns related to service options in terms of impacts on hauling industry and commercial business
- Increase understanding of current sustainable waste management that support a circular economy.
- Establish positive working relationships with affected audiences to support continued improvement in commercial recycling.

## CHALLENGES

The following are some of the challenges that affected the engagement process and could impact recommendations for next steps.

- Commercial haulers may view this as City interfering in their business/taking business away from them.
- Commercial hauling is highly competitive, which means they were hesitant to discuss any specifics related to recycling operations.



- Business community may view this as the City imposing new requirements that cost them money/affect their ability to compete.
- Health care sector is largely under provincial authority and has unique requirements.
- It is recognized that space limitations are a significant challenge for commercial sector that could affect service options.

## **BUSINESS ENGAGEMENT OVERVIEW**

### **Phase 1: Initial Outreach to Richmond Businesses**

Notification for this phase included emails to business organizations, including the Richmond Chamber of Commerce, Tourism Richmond, the Hotel Association and Steveston Merchants' Association in advance of the outreach to Richmond businesses to advise them that the review was being done and to ask them to share information with their members.

Dillon Consulting led the direct notification and engagement with affected businesses through door-to-door visits in the Richmond Centre, Lansdowne, Aberdeen, Parker Place and Steveston Village areas, and via phone calls.

The in-person surveys were available in English, Cantonese and Mandarin and businesses were offered an extended and short-form version. The City also developed a handout which was provided to businesses to highlight the purpose of the commercial recycling service review and to highlight the opportunity for businesses to share their input online, which was offered in English, Simplified Chinese and traditional Chinese through the Let's Talk Richmond platform.

### **Survey Focus Areas:**

- Current recycling and garbage service, including bin types, space and shared services
- Satisfaction with current services
- Estimated amount of waste being recycled
- Awareness of Metro Vancouver's disposal ban
- Awareness of Richmond's single-use plastic ban
- Barriers, challenges and limitations that affect recycling service
- Barriers, challenges and limitations that affect garbage service

### **Mix of Businesses:**

- Retail 41.6%
- Food Service 23.4%
- Hotel/Hospitality 9.1%
- Office/Administration 7.8%
- Medical 6.5%
- Grocery 5.2%
- Industrial 2.6%
- Fitness Centre 2.6%
- School/University 1.3%

Consultation with the commercial sector took place the week of May 16, 2022. Dillon staff approached a total of 302 businesses, 231 in person and 71 by phone. Of the total 302 businesses, 77 responded to the survey (63 in person and 14 by phone). Overall, the retail sector completed the most surveys (42%), followed by the food service sector (23%).

## **Key Themes:**

The following are the general key themes of the input shared by businesses in this phase:

- 66% of businesses indicated they have enough space for garbage and recycling containers
- Over 63% of businesses indicated they were very satisfied with both their recycling and garbage services
- 33% of respondents estimate that 26 to 50% of total waste generated is recycled
- 29 % of respondents estimated that 51 to 75% of total waste generated is recycled
- 58% of businesses share their waste containers with one or more other businesses
- Approximately 30% of businesses indicated they use the Richmond Recycling Depot
- 58% of businesses are aware of Metro Vancouver's disposal bans

The key themes shared about barriers, challenges and limitations for recycling services are highlighted below:

- 16% of businesses indicated that there was limited space for additional bins
- 8% indicated recycling was too expensive
- 6% indicated it is within their landlord's control
- 49% indicated a variety of "other" responses that included themes such as:
  - Bins are not secure
  - Inconsistent collection frequency
  - Illegal dumping
  - Issues with recycling hauler

The key themes shared about barriers, challenges and limitations for garbage services are highlighted below:

- 42% of businesses indicated that illegal dumping by third parties is an ongoing issue;
- 7% indicated cost was an issue;
- 7% indicated cleanliness was an issue; and
- 45% indicated a variety of "other" responses that included:
  - Overflow issues;
  - Garbage bin lids are too heavy;
  - Inconsistent collection frequency; and
  - Issues with security of bins.
- Ideas for how the City can support improved recycling/increased waste diversion:
  - Request that haulers provide pick up of recycling twice a week.
  - Educate businesses, building management and public with visual formats to explain bans, how to recycle.
  - Supplement or offer free recycling collection and provide recycling bags.
  - City implement green program service with private company pricing.
  - Better options for bottle recycling.
  - Audit business.
  - Increase amount of materials accepted in recycling.
  - Provide additional drop off stations in shopping plazas e.g., batteries.
  - Enforce bylaws.
  - More collection areas.
  - Pick up service for food/green waste, paper and bottles.

### **Phase 1: Jurisdictional and Regulatory Review**

Dillon Consulting completed a jurisdictional review of the following North American municipalities:

- City of Toronto
- City of San Francisco
- City of New York

The topics reviewed as a part of the jurisdictional review included:

- Jurisdiction overview (population, area, country);
- Relevant legislation, bylaws, policy drivers and contractual requirements;
- Overview of existing waste management and recycling services provided (if any) to the commercial services sector;
- Existing partnerships (if any);
- Staffing and budget allocated to commercial services sector garbage and recycling;
- Frequency of service and/or service restrictions;
- Communications and marketing approaches;
- Educational materials utilized;
- Innovative strategy and/or program development and implementation;
- Enforcement activities;
- Program successes and challenges/opportunities for improvement; and
- Lessons learned and next steps.

The regulatory review assessed recycling and other waste management requirements at a federal, provincial, regional and municipal level, including environmental protection, regulations managing the movement of hazardous waste and recyclable materials, bans on specific products such as single-use plastic, zero waste and circular economy initiatives, producer responsibilities and disposal bans. The review also looked at commercial levies and hauler licensing. City staff also conducted a regulatory scan and the content below contains findings from both reviews.

### ***Jurisdictional Review***

#### ***Government of Canada***

Commercial regulatory requirements at a federal level include the Canadian Environmental Protection Act (CEPA) which regulates the interprovincial and international movement of hazardous waste and recyclables, the Single-Use Plastics Prohibition Regulations and the Ocean Plastics Charter.

#### ***Province of BC***

The provincial Environmental Management Act (EMA) grants local governments and regional districts the authority to regulate waste disposal in relation to liquid waste, municipal solid waste and recyclable materials. Additionally, under the Community Charter, municipalities are to provide services, laws and other matters for community benefit, and are granted the fundamental power to, by bylaw, regulate, prohibit and impose requirements in relation to municipal services.

The EMA includes regulations and policies specific to individual industries. The provincial government has also implemented the *Single-Use and Plastic Waste Prevention Regulation* as

part of the CleanBC Plastics Action Plan and has set provincial waste disposal targets as part of its zero waste and circular economy initiatives.

The Recycling Regulation, under the authority of the EMA, sets out the requirements for BC's Extended Producer Responsibility (EPR). EPR requires producers, such as manufacturers, distributors, and retailers to take responsibility for the life cycle of the products they sell. Producers often come together to form agencies that operate recycling programs on their behalf. Commercial businesses in Richmond are able to participate, operate and utilize EPR programs.

#### *City of Richmond*

The City's Solid Waste and Recycling Regulation Bylaw No. 6803 places the accountability for managing commercial waste on the occupier of the non-residential property to provide and keep on the property, an adequate number of commercial garbage containers for all garbage generated onsite. Additionally, every occupier of a residential property or non-residential property must remove all garbage generated as often as necessary, to prevent garbage from becoming unsightly or from causing a health concern.

#### *Metro Vancouver*

Metro Vancouver places restrictions and conditions on the materials accepted at regional disposal facilities and transfer stations. The Greater Vancouver Sewerage and Drainage District Tipping Fee and Solid Waste Disposal Regulation Bylaw No. 330, 2019 does not regulate business activity, however, under the Disposal Ban Program certain recyclable materials are banned from the landfill. If loads of garbage delivered to regional disposal facilities or transfer stations, contain banned recyclable materials (see Table 1) in excess of established limits, surcharges are applied. The surcharges are designed to inflate disposal costs and incentivize businesses to recycle the materials properly.

Metro Vancouver is also responsible for regulation of waste haulers including collecting and remitting of the Generator Levy and maintaining records. At this time there is no licensing process required.

Metro Vancouver's *Bylaw 181: Private Solid Waste Facility Licensing* regulates all privately operated municipal solid waste and recyclable material operation facilities. Licenses are required for all privately operated landfills, transfer stations, material recovery facilities, storage facilities and brokers of municipal solid waste and recyclable materials.



## Service Model Review

### Commercial Garbage and Recycling Service Model Comparison

| Service Models                                    | Example                | Applicable Businesses          | Payment Structure  | Regulatory Landscape  |
|---|------------------------|--------------------------------|--|---|
| Opt-in City Service                               | Toronto, ON, Canada    | Small commercial               | Variable rate, paid by utility   | City initiated service  |
|   | Burnaby, BC, Canada    | Small commercial               | Variable rate, paid quarterly  | City initiated service - <i>City of Burnaby Bylaw 14046</i>   |
|   | Guelph, BC, Canada     | Small mixed-use, institutional | Municipal property taxes   | <i>City of Guelph Waste Management By-law (2019)-20392</i>  |
| Franchise – single hauler                         | San Francisco, CA, USA | All commercial                 | Variable rate discounted in proportion to the volume diverted from the landfill. | <i>California Assembly Bill (AB) 341</i><br><br><i>The San Francisco Mandatory Recycling and Composting Ordinance</i> |
| Franchise – multiple haulers zoned                | New York, NY, USA      | All commercial                 | Base and Variable Rates, paid by business  | <i>The State of New York (16 RCNY§ 1 10(a))</i><br><br><i>Local Law 199 Commercial Waste Zone Law (CWZ)</i>           |
| Required – Recyclables & Organics Diversion Plans | Vancouver, BC, Canada  | All non-residential            | N/A  | <i>City of Vancouver Solid Waste By-law 8417</i>  |

#### City of Toronto

The City of Toronto is not mandated to provide waste management services to the industrial, commercial and institutional services (IC&I) sector. Eligible “small commercial” customers pay for garbage collection and Yellow Bag program, and receive Green Bin organics and Blue Bin recycling collection at no additional cost. City of Toronto currently services approximately 14,500 small commercial establishments.

Garbage and yellow bag collection is financed through a subscription service (variable rate system) and charged through the utility. To be eligible the commercial businesses’ ground floor area must be less than 500 square metres and less than four stories, or at least a third of the building space is residential (no size restriction) and less than four stories. Of the 14,500 commercial business, 7,560 are not designated for the new provincial Blue Box Regulation, the City is considering operational and financial impacts.

The current commercial collection program has resulted in increased diversion as participation has been higher than if these businesses relied on private haulers. In their 2016 Long Term

Waste Management Strategy the City of Toronto is looking to identify a mechanism to allow the City to influence greater waste diversion in the IC&I sector.

The City of Toronto anticipates that IC&I will be addressed as part of an Ontario provincial strategy under the Waste-Free Ontario Act.

#### *City of Burnaby*

City of Burnaby provides garbage, green waste and recycling collection services for over 500 commercial customers. These include businesses, religious buildings and educational establishments and as an extension of the multi-family garbage and recycling collection.

Commercial rates are made available through the City of Burnaby website, payments are billed quarterly and can be paid through Burnaby Commercial Refuse, by mail or in person through the Burnaby Tax Office.

#### *City of Guelph*

City of Guelph provides garbage, recycling and organics collection to downtown IC&I properties and eligible small mixed-use and institutional properties on existing residential routes outside the downtown collection area. Collection services are funded by municipal property taxes.

Starting in January of 2025 Guelph will no longer be collecting blue box materials under the Government of Ontario's new Blue Box Regulation, blue box collection for schools (public, separate, and private that teach Kindergarten to Grade 12), non-profit retirement and long-term care homes, and multi-residential buildings (e.g., apartments and condos) will be provided by Ontario Producer Responsibility Organizations (PRO). Guelph's commercial recycling collection program will end, and IC&I properties will make alternate arrangements to have their recycling collected.

#### *City of San Francisco*

The San Francisco Mandatory Recycling and Composting Ordinance requires all commercial businesses to source separate their waste into recyclables, compostable and landfill trash.

San Francisco's waste management company, Recology, holds a no-bid contract with the City of San Francisco and provides garbage, recycling and compost collection. The City of San Francisco offers a variety of free services and assistance for waste management, including, consultations, bin labels, signs, commercial building toolkits, educational materials and multilingual training.

San Francisco's recycling and compost collection program is available to all business types at a reduced rate. Rates are based on service type, collection frequency, and site-specific diversion rates. Rates are designed to offer discounts to businesses based on their diversion rate. Rates are calculated using both a base and variable amount, depending on the businesses diversion success. The variable rate is discounted in proportion to the percent of service volume that is diverted from the landfill (up to 75% discount).

Regulations such as waste separation, mandatory recycling and composting as well as providing adequate space for all waste streams in addition to incentivizing waste diversion through a reduction of fees has helped to improve waste diversion.

#### *New York City*

The State of New York (16 RCNY§ 1 10(a)) requires commercial businesses and commercial tenants to recycle. Currently all garbage and recycling is collected by private haulers. In 2019 New York City established Local Law 199 Commercial Waste Zone Law (CWZ). Businesses in the City will be divided into 20 separate zones. Each zone will be serviced by up to three haulers.

In advance of the CWZ program implementation the DSNY aims to reach more than 100,000 business owners through in-person canvassing, phone calls and direct mail. The New York City Department of Sanitation (DSNY) expects to begin implementation of the first CWZ pilot zone in the second or third quarter of 2024.

Initial challenges with the program include revisions to the RFP process to gather more detailed information around pricing, technical plans and financial and compliance data as well as a lengthy evaluation process requiring a committee to score proposals, negotiate contracts, select awardees and approve contracts.

#### *City of Vancouver*

The City of Vancouver By-Law 8417 requires the owners and occupiers of non-residential properties to provide a Recyclable Materials Diversion Plan and an Organic Waste Diversion Plan. Non-residential properties are asked when obtaining a business license or renewing a license to detail the methods being used to divert food waste and recyclables for disposal at the landfill or incinerator site.

### **Phase 2: Workshops and Targeted Outreach**

This phase of community engagement expanded on the Phase 1 input and research, and involved more in-depth discussion with businesses and local organizations who represent a variety of business sectors. This engagement included a business workshop and targeted outreach that involved one-on-one meetings and additional door-to-door site visits.

The notification for this phase included:

- Emails to businesses involved in Phase 1 who indicated an interest in further discussion on recycling services;
- Emails and phone calls to Richmond organizations that represent the various commercial sectors in the community, including Tourism Richmond, Richmond Chamber of Commerce, Asian Restaurant Association, School District No. 38;
- Emails to businesses currently receiving services through the City Pilot for Commercial Garbage and Recycling Services;
- Richmond Sustainability e-newsletter;
- Emails and phone calls to affected business sectors including area shopping centres, Vancouver Coastal Health Authority;
- Emails and phone calls to eight recycling and garbage hauler companies (three participated in meetings); and
- Door-to-door outreach to businesses in three mini-malls (Blundell, Ironwood and Terra Nova).

The engagement discussions focused on:

- Challenges related to garbage and recycling collection and ideas for how to address challenges;
- Opportunities to leverage what is working well, including sharing best practices and suggestions to promote commercial recycling and waste reduction; and
- The City's role in terms of encouraging and supporting increased commercial recycling, including requirements, what the City should do and should not do.



## STAKEHOLDER KEY THEMES

The following is a summary of the key themes of the input shared by participants in this phase of the community engagement. This is not an itemized list of comments, and the input represents opinions and ideas shared by participants, which may differ from other data collected as part of this commercial recycling services review.

### Business Workshop

The business workshop involved six participants, with representatives from Tourism Richmond, Lansdown Centre, Aberdeen Centre, School District No. 38 and Pro Claim Group. The facilitated workshop included a presentation highlighting some of the key outcomes from the Phase 1 survey input, followed by discussion on the challenges and opportunities that affect commercial recycling and waste management as well as discussion on the City's role.

In general, while there are some common challenges and opportunities, there are also specific concerns that affect different commercial sectors; there is no one size fits all solution.

Challenges – issues, gaps and processes that are not working:

- Illegal dumping is a top concern as, even when there are security cameras, there are no consequences. The RCMP does not enforce illegal dumping and the City's bylaw does not apply to dumping on private property so there is no means of addressing the issue. It's unclear whether the dumping is done by citizens or people operating a collection service who then dump the waste rather than paying tipping fees or sorting it into recycling.
- Visitors in the community are not familiar with recycling programs and are not accountable/do not care, so do not sort or recycling consistently.
- While some hotels have recycling bins in rooms, it is not required so it is not done consistently and there are no consistent types of bins/lid shapes and labels.
- Even though most families with students in School District No. 38 live in Richmond, the recycling programs are not consistent and the diversion rates at schools are significantly lower than at home. It's not clear why there is a difference; however, it could be due to the different types of recycling at school (only paper recycling and garbage cans in the classroom, but diverse recyclable materials in other areas, such as paper towels, food waste, automotive, take-out containers, cardboard, plastic and Styrofoam and e-waste), or it could be lack of accountability ("not mine"), or lack of clear, meaningful and consistent signage, or a combination.
- Need waste diversion to be part of the curriculum but there is no time.
- Anchor tenants in shopping centres are more on board with recycling services, but smaller tenants are less so, and many are hard to reach due to language barriers, so they don't read the onboarding materials.
- Cost is a factor as, other than cardboard, most recycling is no longer seen as a commodity. The cost involved to add services that is higher than what business gets for selling recyclables.
- High staff turnover in hospitality and retail sectors requires constant education.
- Construction/demolition waste makes up about 50% of landfill, yet there is limited waste diversion in this sector.
- When it is easier to just collect all waste in one bin (more convenient), there is no education about why it is important to recycle/divert waste and there are no consequences, there is no incentive to change behaviour.



- While retail tenants are recycling as part of business practices, it's more difficult to get customers to recycle, they put everything in the garbage and/or they don't sort items correctly even when the bins are available.
- Some businesses are impeded by "analysis paralysis" that results in no action to improve recycling as they cannot determine what will work best or how to address challenges.
- Language barriers in the community make it challenging to communicate how to recycle correctly.
- Currently there are no incentives from haulers to reduce waste, and customers who want to maximize waste are dealing with costs as a factor as half their cost is lease/rent and the other half is operational cost for collection.

Opportunities – what is working well or could be leveraged to improve recycling:

- Schools: "Zero Waste Day" where students take all lunch waste home, end of school locker clean out, working with parents, e.g., make sure kids will eat what you send for lunch.
- All waste streams should have EPR/Stewardship.
- Specialized waste from schools could go to the Recycling Depot, but would need a program in place.
- Use of cameras helps with identifying illegal dumping (but no enforcement) as well as identifying tenants who are not recycling properly. Generally, direct follow up with tenants and the use of fines will result in improved recycling and sorting.
- Organics are collected behind the food court and staff help with sorting in the food court.
- Quarterly diversion reports to gain insight into types of materials and bins required, sorting issues, cost benefits of recycling, annual rebates for recycling based on audits, etc.
- There are positive examples of demolition/construction waste diversion initiatives and benefits that could be highlighted to build on each success, e.g., LEED and GO Green buildings, adding extra bins at the work site and at transfer stations (can be as many as 26 diversion streams such as drywall, wood), and it costs less to recycle.
- Raise awareness about benefits of recycling, such as beverage containers value, post-COVID changes such as fewer cleaning days with cost-saving incentives.
- The City of Guelph in Ontario collects waste from small mixed-used buildings and institutional properties outside of the downtown area that meet certain criteria to establish equitable service levels in the IC&I sector. (For more details visit <https://guelph.ca/living/environment/garbage-and-recycling/waste-collection-for-businesses/>)
- Small businesses need education, resources such as training kits for onboarding new employees to make it as easy as possible to recycle correctly.
- Larger businesses and tourism sector can tap into the corporate responsibility priorities, but there needs to be a way to help apply it locally. They are also more likely to be responsive to customer priorities and consequences for not recycling. For example, tender processes could include waste diversion requirements to balance diversion costs with corporate responsibility.
- Hauler contract considerations: haulers charge per bin and weight, so could look at incentives to keep costs down as part of contracts, and waste audits are useful to better understand issues and could be something that is incorporated into contracts with haulers.

- Richmond could have a waste diversion audit and incentives program similar to BC Hydro Energy Audits with incentives through the permit process so there is a cost benefit rather than consequences.
- Create a culture of conservation in commercial sector, tracking diversion percentages and reporting out, perhaps by sector.
- Need to have the processors/systems in place for the range of recyclable materials being collected, e.g., demolition materials.
- The City needs to ensure the commercial sector allows for adequate space set up at the planning stage of new buildings, and once it is built, it is up to the building management to set up the services.

#### The City's Role in Supporting Commercial Recycling:

- Implement education and awareness communication, such as the single-use plastic ban communication and engagement with business and the community, including targeted information to business license holders.
- Avoid use of bylaws as they can be seen as a negative, resulting in a competitive disadvantage unless all municipalities in the Metro Vancouver must meet the same requirements.
- Consider incentives for doing the right thing, an opt-in approach, using waste audits, data showing progress.
- Treat everyone the same way, whether incentives or penalties, and have clear steps before any penalties, such as the way single-use plastic ban enforcement is managed.
- Provide bin signage so it is consistent and clear, looking at what others are doing to apply best practices.
- Consider operational shadowing/reviews, such as a day in the life of a tenant, hotel, restaurant, demolition company to understand needs and ways to improve recycling/waste diversion.

#### Suggestions:

- Reach out to local organizations with clear messaging about why the City is working to improve commercial recycling, the benefit to members, what organizations/businesses need to do and any incentives if applicable.
- Providing recycling tips handout and advice for waste management efficiency.
- Work through permitting and business licensing to reach businesses and understand their pain points.
- Connect with schools to leverage programs like Green Teams, waste audit information and Green Ambassadors, and to provide staff with information on local recycling programs (particularly for staff who don't live in Richmond).
- Help address illegal dumping.
- Support environmental champions in commercial sector – support staff by equipping them with tips, set them up for success and build their skills.

#### Individual Meetings

Following the business workshop, the City held one-on-one meetings with representatives from three hauling companies, Vancouver Coast Health, the Asian Restaurant Association and three property management companies. The discussions focused on the specific considerations for each sector.

## ***Garbage and Recycling Haulers***

The City reached out to eight different waste haulers operating in Richmond and throughout the Lower Mainland to gain insight into their perspectives on commercial recycling. Three companies agreed to meet with City based on the understanding that the hauler's input would remain anonymous for competitive reasons. The City met with each hauler representative individually, and the discussion focused on exploring why commercial recycling is lagging, what business sectors perform better, processes for handling contamination and what the City should or should not do to help support increased commercial recycling.

In general, most haulers said they aim to sell as many services as possible and offer a complete package of garbage, recycling and organics services. They all supported increased education for businesses about recycling services available and ways to reduce contamination, and enforcing how better waste diversion can impact their bottom line. All three waste haulers also indicated that the City of Richmond should not get involved in the hauling business.

The following are the key themes of the hauler's responses to each discussion topic.

Factors affecting commercial recycling/why it is lagging behind residential:

- Cost is the primary factor as recycling is not cost effective. It doesn't save money, and while it is a cost of doing business, the more services, the higher the cost so it is too expensive for some businesses. As well, single-stream recycling may be more convenient for customers, but it also costs more than garbage collection.
- Labour and time requirements are another major factor as staff capacity/resources are limited and sorting can be labour intensive. It's easier to throw everything in the garbage. There is also lack of training and employees are not motivated to recycle.
- There is often limited space for bins.
- The volume of specific items beyond garbage/cardboard are not worth the effort or cost to sort and recycle.
- Shift in priorities since the pandemic as many businesses are still recovering and just trying to keep their business open.

Sectors doing a better job with waste diversion/recycling:

- When it costs less to recycle than throw it in the garbage, businesses will recycle. For example, where it's more cost effective for food processors to have organics recycling or when they have compactors, or companies that generate a lot of cardboard, which often still has a commodity value. Organics recycling is easier to sell because it's mandated by Metro Vancouver and there was a lot of communication about the ban – much more than communication about other banned items.
- For some sectors, recycling is a priority because "it's the right thing to do" or expected from customers/the public even though there is a cost involved, e.g., schools, government, health sector and some hospitality, such as restaurants that are doing a lot of organics recycling.

Sectors doing less recycling/waste diversion:

- Newer businesses are less likely to have recycling, possibly because they are not aware of requirements, or they may not know what to recycle.
- Small businesses (without the space, time, labour).
- Businesses that don't feel they generate enough to warrant it (organics in offices).
- Collection and contamination at the end of the school year is particularly bad.



Resources haulers provide to customers:

- Posters with pictures/graphics.
- Dos and don'ts decals using graphics to show what can and can't go in bins.
- Website resources, such as links to Metro Vancouver information about bans.

Measures to address contamination:

- If contamination is visible in the bins, haulers do not pick it up. They also tag the bin to note the contamination.
- Contamination will contaminate the entire load.
- Some trucks have cameras in the hopper.
- Sometimes photos come at the processor.
- Follow up includes a phone call or email to outline the issue.
- Fines and other fees are charged to the customer for contamination or when banned items are in the bin.
- They have minimal issues with repeat offenders.

Information haulers would like commercial sector to understand:

- It's not up to the hauler to educate their employees and customers.
- Haulers don't make the rules about what goes in recycling and what is banned.
- Haulers are bound by rules and regulations and operate a business to provide a service and want to keep customers happy.
- Businesses need to take responsibility for their waste inside their operation (e.g., the right types of bins and recycling services, sorting materials correctly to avoid contamination).
- Businesses need to find the right resources for information.
- Layout and access are a business responsibility, including allocating space for recycling and where haulers will collect bins.
- You don't call a hauler just for recycling, you call for complete service and the haulers need to densify their run (have enough collection volume to justify cost for sending out trucks). Most contracts are for garbage and then the recycling are add-ons to get the garbage contract, such as a package deal that includes cardboard, paper and maybe organics.

Single-stream recycling versus source separation recycling:

- Single-stream recycling is convenient for users and requires less space, but it is generally the worst way to recycle as it is very contaminated so that most of the items are no longer recyclable, and it is also the most expensive service option.
- Multi-stream, source separation is the best way to get quality recycling.
- Only a couple processors will accept single-stream recycling in the Lower Mainland, and they have rules for the contamination levels, which means that if the load is contaminated, they charge even more.

Opportunities to increase commercial recycling:

- Some has to start at manufacturing: reduce the amount and type of packaging and don't use products that can't be recycled.
- Businesses need to take responsibility for their recycling programs, including who puts what into the bins, and for having the right receptacles, posters and decals in place.

- Promote and use websites like Recycle BC to learn more about all the materials that can be recycled.
- Educate staff and keep the information topical – why recycling is important, how to recycle correctly.
- Municipalities may have to push for more commercial recycling, such as through regulations or other requirements, but cost is going to be a factor.

What the City should do:

- Increase education and promote recycling through communication and marketing.
- Show ways recycling helps their bottom line and provide examples of what others are doing to promote increased recycling, e.g., good examples of front-end recycling programs and signage.
- Enforce current regulations/bans or businesses will do the bare minimum.
- Identify the real problem makers.
- Request waste audit information from companies that are already doing them to gain a better understanding of their waste and recycling needs.
- Offer audits, and possibly target certain areas with follow-up education.
- Allow commercial sector to use the Richmond Recycling Depot.
- Highlight what businesses are doing correctly and why it's important.
- Ask business what it's going to take to get them to recycle more.
- Provide information about commercial recycling – haulers that offer different services
- Develop a marketing/information sheet to send out with business licenses.
- Help with finding processors, particularly for recycling such as flexible plastic, glass, mixed containers that are not totally clean.

What the City should *not* do:

- Don't try to get involved providing commercial recycling as a service – it's too complex and creates a big mess when trying to manage it fairly.
- Don't be heavy handed with enforcement.
- Don't implement a commercial recycling bylaw.

Illegal dumping observations:

- The illegal dumping they see in Richmond is about the same as other cities.
- There can be safety concerns when people who are homeless light fires in bins or stockpile dumped materials.
- Encourage customers to lock their bins.
- It may be cheaper for the City to just collect it in the first place – offer Large Item Pick Up to all residents.
- Raise awareness about options like the Recycling Depot, Landfill Voucher and Large Item Pick Up Program.

***Vancouver Coastal Health***

There are four health authorities in the region and the waste contract is managed regionally, and waste includes both non-hazardous and hazardous materials. For this study, only non-hazardous materials are being reviewed as hazardous medical waste is federally regulated and managed by a separate vendor. There is a Waste Contract Manager for each health authority, and a standardized recycling program (same bins, accepted items, signage, decals) for all of the

health authority facilities in the region. The standard streams are mixed containers (including refundable bottles and cans), mixed paper and organics. If sites want to collect beverage containers separately on their own to keep the refund, they have that option.

The waste diversion goal for all health authorities is 50% by 2030. They have different goals for 2025 depending on their current diversion rates. The 50% target is a stretch goal for hospitals, in large part due to the limited access to available processing facilities for many of their non-hazardous recyclable waste. Smaller, long-term care facilities have already hit the first goal as they are currently recycling 25% to 30% of their waste, which is about the average (25%) for the health care sector in North America. Long-term care facilities are more like residential, where hygiene items are the biggest component of their waste.

#### Challenges affecting recycling in the health service sector:

- Many of the products used in health care are not recyclable in this market. For example, PVC products like oxygen masks, empty IV bags and other soft plastics. A business case was done to see if these items could be recycled as they are doing this in Ontario, but recycling processors in BC did not want to accept specialized products.
- There can be a perception that everything coming from a hospital or health care facility is hazardous waste, and recycling processors would take the materials for waste-to-energy, but that is not recycling.
- Patient care priorities can affect whether staff can sort waste into recycling. As an example, in the ICU, nurses don't leave bedside so when they generate waste, they can't leave the room to go sort it – everything goes into garbage.
- Isolation precautions in some health situations mean that none of the waste can leave the patient's room – everything goes into the garbage.
- The Polypropylene in personal protection equipment (PPE) can't be recycled.
- When COVID hit, all recycling went to waste-to-energy facilities, so now the health authorities are struggling to get some items back into recycling programs.
- The different recycling rules in different communities can cause confusion, and there are inconsistencies in what haulers will offer for service levels e.g., coffee cups are not accepted in recycling by their hauler even though these cups are accepted in most residential recycling programs. Recycling at work is not treated the same as recycling at home.

#### Opportunities and positive actions that improve waste diversion:

- Shifting products away from disposable to reusable might be the best way health care facilities can reduce waste most. A garbage composition study in six clinical units that generate a lot of waste found that around a quarter of garbage waste was technically compostable (paper towels) and there was a small amount of food scraps, but not much else could have been diverted. Food services is using reusable service ware in public cafeterias and for patients. Clinical products – a lot of them surgical – had shifted to disposable during the pandemic, and now they are trying to shift back to reusable. Also switching to reusable gowns instead of disposable.
- The provincial Ministry of Health is putting together a PPE recycling program for the whole province. PPE is very light, and waste is measured by weight, so it may not have a lot of impact on numbers, but still helps with waste diversion.
- Relationships can make a big difference, so work needs to be done to build relationships with haulers and processing facilities to educate them about what can and cannot be accepted, what is and isn't dangerous.



- Staff are passionate about recycling. They are very supportive of anything related to environmental sustainability and will request recycling bins for their units. They also come up with ideas, e.g., medical glove recycling.
- Education about managing hazardous medical waste is embedded in health care staff education, so they naturally have the same attention to detail when it comes to recycling non-hazardous materials.
- While staff are experts in how to recycle weird medical products, there's always a place for ongoing education. The health authority has online modules and opportunities for in-person training. They also have a whole course on waste management that covers hazardous and biomedical waste as well as other recycling streams. It's a required course when staff are on boarded.
- Bins are everywhere – in all of the clinical units, in hallways, by doors – and are easily accessible to public and staff. The bins are paired and with garbage close by. Also, having the same labels and bins across all facilities means that staff are familiar with how to recycle even when they move to other sites.
- There is a staff volunteer program for general sustainability and a staff position to manage the recycling program. There is support from managers to put in time towards sustainability projects and funding available to explore better waste management opportunities.

Information that is important for haulers and processors to understand:

- Most health authority waste is not dirty or gross. Only 6-7% of the waste is biomedical or hazardous. The vast majority has not been close to anything medical. It's just normal waste.
- It's difficult to understand why the recycling markets in B.C. cannot support health authority waste streams. For example, polypropylene fabric wrap is not accepted even though it's 100% recyclable and it's never even been in a patient room. It's in a sterile environment and then thrown away. Health authorities generate tonnes of this material, which feels like textile but made of polypropylene. It's referred to as 'blue wrap' and it's literally sterilized – the cleanest possible waste – but it is not accepted for recycling. The same goes for vinyl PVC products like oxygen masks, oxygen tubing and IV bags that are empty and would just hold fluid/water. They are clean, consistent waste streams. Ontario's program is PVC123.

Options to address challenges and leverage opportunities:

- Consistency in labelling, messaging and accepted items is needed to reduce confusion. There's also lack of clarity around biodegradable and compostable plastic.
- Waste processors and haulers would ideally accept the same products from businesses and health care that they do from residential recycling, e.g., coffee cups.
- Processing facilities are needed for items like flexible/soft plastic and other clean waste generated by hospitals.
- Be upfront about what is being sent to waste-to-energy facilities.
- Education needs to be consistent so people understand what to do and what the current state of recycling is in the community.
- Despite all the challenges in the health care sector, there is a shared goal to do better. They want to push themselves to do new things, and they don't see health care as requiring an automatic exemption - just an acknowledgement of their unique challenges and requirements.

- Their wish list is:
  - New waste streams for key categories where they can't find a recycling processor.
  - While they have data for standardized streams, they would like data for other streams like construction waste diversion.

What the City can do:

- Do a scan of current recycling processors, what they offer, where they are going in terms of technology/innovation and share their research and other data.

### ***Property Managers***

To gain a better understanding of the service levels, challenges and opportunities that affect garbage and recycling programs run by property management companies, City staff reached out to six property management companies and met with three property management companies representing six complexes in Richmond.

Types of services:

- Services vary depending on the tenant (e.g., offices vs food service/grocery), but generally they provide cardboard and organics recycling in addition to garbage collection.
- If a business requires services beyond garbage, organics and cardboard collection, they generally have to arrange their own collection service or dispose of it themselves, unless the majority of the tenants want the additional service.
- A large part of recycling is dependent on employees separating items correctly, so it might be wanted by tenants, but employees would need to follow the requirements.

Limitations, challenges and barriers:

- Have had to reduce services because they were not being used, was not seeing compliance. If requirements are not being followed, they can't force it on the tenant – will remove the service instead.
- If it's required, will provide the service.
- Depending on the situation, may increase or decrease service level, such as frequency.
- For monitoring, contamination is sometimes reported by the waste disposal hauler and there can be fees attached, which is passed on to the business if contamination from their business is happening repeatedly.
- Noticing a lot of household garbage in commercial garbage bins. Even when the bins are locked, people throw their garbage on the ground.
- Illegal dumping remains a challenge.
- Bins are removed from public areas on their properties as people were vandalizing bins and rummaging through recycling.

Opportunities and what is working well:

- Services are easy to source.
- There's an app to show the level of waste in the bins and how full the last service was to track usage and service level requirements.

What the City can do:

- Education and community awareness so people fully understand what is required and how to sort correctly.



- Educating business owners about banned materials, what is and isn't allowed in the garbage.

### ***Asian Restaurant Association***

The BC Asian Restaurant Cafe Owners Association is a non-profit organization of restaurant owners and related businesses that was created to strengthen and promote the Asian restaurant industry. Members offer mutual help to improve business and an environment to enhance the public image of the Asian restaurant industry.

City staff met with a representative of the Association to discuss the challenges and opportunities that relate to garbage and recycling services for their members.

#### **Primary challenges:**

- In general, restaurants have organics recycling, but other streams such as paper and containers is challenging due to space limitations.
- Waste is usually not sorted – everything goes in the garbage.
- Staff do not have the time to recycle, and most do not consider recycling a priority.
- Restaurants need to have the right containers for use inside the kitchen where there is never enough room.
- Recycling containers in the restaurant areas do not look good.
- Restaurant customers generally do not care about what happens after their meal, such as whether the leftover food is recycled.

#### **Primary opportunities:**

- Recycling is getting better as people are getting used to it and more people are continuing to improve their recycling, but it takes times time.
- It needs to start with rules (the City needs to make it a rule or most of these businesses will not do it), then training the staff and then the cost implications.

#### **What haulers need to know about restaurant recycling:**

- Most haulers understand the needs of restaurants.
- Haulers should take direction from the City and other authorities.
- Restaurants should be able to separate their recyclables properly, but if the hauler does not say no to certain items in the garbage, the restaurant operators will not change. If they are allowed to mix everything together, they will continue to do so. Organics is the only item they separate as they will get in trouble if organics are found in the garbage.
- Cost is another critical factor. Costs like fines will make people change, but they will annoy people as well. Know where to draw the line between the incentives and penalties.

### ***Mini-Mall Surveys***

As a follow up to the initial survey, staff conducted door-to-door surveys at three mini-malls in Richmond (Blundell Centre, Terra Nova Village and Ironwood Plaza). Staff approached 38 businesses and 31 responded to the survey. Businesses were asked about the garbage and recycling services provided at their complex, limitations to increased recycling and what they felt the City should do or not do to support increased commercial recycling.

Types of businesses reached with survey:

- Food Service/Restaurant 27%
- Retail 24%
- Service/Administration 14%
- Medical 13%
- Grocery 11%
- Financial Institution 8%
- Fitness 3%

Feedback from businesses about current services:

- For most businesses, recycling services are provided by and at the discretion of the property managers.
- All three mini-malls visited had access to garbage and cardboard services.
- 27% of the businesses had organics recycling as it was primarily limited to food establishments (restaurants, food service, and grocery stores).
- Restaurants and food retailers who had access to organics recycling used a cart that had been provided to that specific business. In some instances, the cart size and frequency of pick-up was not sufficient to handle the waste being created.
- Large corporate entities (multi-national banks, grocery chains, retailers) have an internal culture of waste reduction, including programs and training as well as janitorial staff to follow the organization's recycling requirements.
- 91% of businesses who completed the survey were aware that certain items are banned from the garbage including organics, Styrofoam and cardboard.
- In addition to the standardized services provided by property managers, some businesses also independently recycle items such as flexible plastics, Styrofoam, glass containers, return-it beverage containers, ink cartridges, batteries and lightbulbs.

Limitations or barriers that affect recycling:

- Capacity (bins are full) and access to bins can be limited.
- Recycling is inconsistent – some businesses doing more than others.
- They need to arrange their own recycling service for items beyond garbage and cardboard.
- Not everyone supports recycling and/or they do not know how to recycle correctly.

What the City can do to support increased recycling:

- Do nothing.
- Increase awareness on how to recycle correctly.
- Require more of businesses or create a bylaw.
- Increase education for school-aged children as well as for businesses and landlords.

***Mini-Mall Site Audits***

The mini-mall door-to-door visits included checking out bins to learn more about the types, location and general use.

- Large businesses with corporate sustainability practices (TD Bank and RBC primarily) have more comprehensive recycling programs in place.
- Most businesses appear to abide by the services offered by the property manager.

- A surprising number of businesses take the extra steps to properly dispose of recyclable materials (flex plastic, deposit bottles/cans, Styrofoam).
- The amount of contamination in the garbage bins shows that a lot of recyclable and banned materials are still just throw away (organics, Styrofoam, paper).

**Phase 3: Business Survey (consultant recommended next phase)**

As the final step in community engagement for this commercial recycling services review, a survey of local businesses is recommended. This would provide an opportunity to present affected businesses with an overview of the options for supporting increased commercial recycling that are being considered and provide an opportunity for them to share feedback on the recommendations before final review and consideration by Council.



# City of Richmond

## Report to Committee



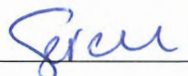
**To:** Public Works and Transportation Committee  
**From:** Peter Russell, MCIP RPP  
Director, Sustainability and District Energy  
**Date:** September 19, 2023  
**File:** 10-6160-07-01/2023-  
Vol 01  
**Re:** **Pesticide Reduction and Invasive Species Management – 2023 Update**

### Staff Recommendation

That outcomes related to the City's Enhanced Pesticide Management Program and Invasive Species Action Plan, as outlined in the staff report titled "Pesticide Reduction and Invasive Species Management – 2023 Update" dated September 19, 2023, from the Director, Sustainability and District Energy be received for information.

Peter Russell, MCIP RPP  
Director, Sustainability and District Energy  
(604-276-4130)

Att. 1

| REPORT CONCURRENCE                |   |  |
|-----------------------------------|---|--|
| <b>ROUTED TO:</b>                 | <b>CONCURRENCE</b>  | <b>CONCURRENCE OF GENERAL MANAGER</b>  |
| Parks Services                    | <input checked="" type="checkbox"/>   |  |
| Sewerage & Drainage               | <input checked="" type="checkbox"/>   |  |
| <b>SENIOR STAFF REPORT REVIEW</b> | <b>INITIALS:</b>  | <b>APPROVED BY CAO</b>   |
|                                   |  |  |

## Staff Report

### Origin

Council adopted the Enhanced Pesticide Management Program and the *Pesticide Use Control Bylaw No 8514* in 2009 to reduce reliance on pesticides within the City for cosmetic purposes and provide support for alternative approaches to cosmetic pest management.

Following implementation of the Enhanced Pesticide Management Program (EPMP), Council adopted the Invasive Species Action Plan in 2015. The Invasive Species Action Plan (ISAP) lists priority species and enables the City to implement a risk-based, integrated pest management approach to invasive species management on City-owned lands. This report outlines key program achievements since 2021 and supports Council's Strategic Plan 2022-2026 Focus Area #5 A Leader in Environmental Sustainability:

*Leadership in environmental sustainability through innovative, sustainable and proactive solutions that mitigate climate change and other environmental impacts.*

*5.1 Continue to demonstrate leadership in proactive climate action and environmental sustainability.*

*5.2 Support the preservation and enhancement of Richmond's natural environment.*

### Analysis

#### Richmond's Enhanced Pesticide Management Program & Invasive Species Action Plan

Pesticides are a group of chemical products used to control unwanted plants and animals, generally known as pests, and have a wide range of societal applications. These can include use for the cosmetic control of typical weeds to the control of noxious, invasive, or disease carrying pests that have the potential to significantly affect human health, ecological function and infrastructure. Concerns regarding society's reliance on pesticides and their effects on local ecology and human health lead to the adoption of the City's EPMP and *Pesticide Use Control Bylaw No. 8514* in 2009, placing the City in a leadership position at the time. The City's program was recognized for its integrated management approach, which includes educational programming and outreach initiatives that are designed to empower residents with information related to the effects of pesticides and potential alternatives. In the time since its inception, many local municipalities have also adopted similar bylaws and holistic programs that restrict the cosmetic use of pesticides and encourage non-pesticide methods.

In certain cases, pesticide use is required to manage noxious invasive species such as knotweeds on public lands that pose a risk to human health, infrastructure or the environment. As defined in the ISAP, the City takes a science-based and integrated pest management approach to the use of these products. Non-chemical field trials have been conducted on species such as the Brazilian elodea, parrots feather, and wild chervil, and City staff's technical knowledge and field experience have been leveraged in the development of operational Best Management Practice documents that are broadly used in BC. These guidelines take a "pesticides as a last resort" approach, and prioritize pesticide free control and mitigation methods. Invasive species are

plants and animals such as feral rabbits and rodents that occur outside their natural range. Because these species are not endemic to an area such as Richmond, most lack ecological controls and pressures to limit population growth. Noxious plants are harmful to agricultural crops, natural ecosystems, and humans. The City has a regulatory responsibility to manage noxious weeds and invasive species under the provincial *Weed Control Act* and *Integrated Pest Management Act* as well as the federal *Plant Protection Act*. These pieces of legislation regulate pesticide use and restrict the distribution and retail of invasive species.

The City's ISAP outlines strategic goals and objectives to prioritize managing invasive species that pose threats to community safety, civil infrastructure, and the local ecosystem. This integrated pest management approach is consistent with provincial and federal pest management frameworks and is supported by funding through the Council approved Capital and Operating Budgets. There are over two dozen invasive species known to occur in Richmond, and all of these species have the potential to cause varying degrees of harmful ecological impacts by out-competing native species and reducing habitat value. Eight of these species have the added potential to pose other serious impacts to infrastructure and/or human health. These species, including giant hogweed and knotweeds, are considered high risk and are listed in the ISAP as priority species for management when identified in the community.

### **Key Achievements (2022 – 2023)**

Richmond continues to demonstrate strong leadership by supporting chemical-free alternatives and prioritizing invasive species management in the community through ongoing capital and operational funding as much as permitted. Current funding levels support many EPMP and ISAP initiatives in the community including education, outreach, public notification, and vegetation management and monitoring. Funding obtained through the Council approved Capital and Operating Budgets in 2022 and 2023 has secured approximately \$600,000 for the inventory and management of priority invasive species. A detailed list of achievements from 2022 and 2023 is provided in Attachment 1. A summary of key achievements include:

1. **City-wide pollinator award** – Richmond's City-wide pollinator program was awarded the Canadian Association of Municipal Administrators, Environmental Leadership and Sustainability Award in 2022. The award recognizes the City's proactive approach to supporting chemical-free practices and protect pollinator habitat through community programming, including maintaining over 10,000 square metres of pollinator habitat in Richmond; equivalent to the size of approximately two football fields.
2. **Canadian bee city certification** – The City became the sixth city in BC to become a Bee Certified City by Pollinator Partnership Canada in 2022, recognizing the City's numerous related programs. Bee City Canada is a voluntary membership program that recognizes Local Government efforts to protect pollinators and their ecosystems through conservation, education, and research.



3. **Japanese beetle response** – The Japanese beetle is an invasive insect that is exceptionally efficient at feeding on a wide variety of plants and an infestation in BC poses a significant threat to the province’s agricultural sector. The federal Canadian Food Inspection Agency and BC Ministry of Agriculture manage the Japanese beetle response efforts in BC. Staff were notified in September 2022 that a single beetle was identified in Richmond’s City Center Neighborhood. Following a provincial order to treat this area, the City treated approximately 1 hectare of right of way and boulevards in this area in 2023. Over 400 notification letters were sent out to residents in the area prior to treatment and appropriate signage was placed in the area. The federal government resumed its regional Japanese beetle trapping and monitoring program in April 2023. No new detections have been reported in Richmond since 2022.
4. **Knotweed treatment program** – The City currently manages 261 knotweed sites, equal to approximately 2.5 hectares. Knotweeds are a top 10 invasive species for control in BC and a priority species in the ISAP. Knotweeds are also designated as provincially noxious under the *Weed Control Act* and must be controlled. Richmond has implemented an annual treatment program on city land, which continues to successfully reduce the spread of knotweed. Knotweed must be treated annually for 3-5 years to be effective. Staff then monitor the sites annually for regrowth and/or decay following treatment. Most of these sites are currently in a monitoring phase, with no observed regrowth. Residents are also required by the Province to control knotweed on private property. The City also maintains various informative material on Richmond’s website to support residents with the management of knotweed on private land.
5. **Community outreach** – Community outreach remains a City priority to build local awareness and stewardship. The City engages the community a number of ways including participating during community events such as the Kwantlen Street Farmers’ Market and the Public Works Open House. This City also develops a variety of social media content including 21 social media campaigns and participating in Invasive Species Action Month.

## Future Outlook

Community feedback for the EPMP, *Pesticide Use Control Bylaw No. 8514* and ISAP continues to demonstrate an ardent awareness of invasive species and a willingness for voluntary compliance, validated with a consistently low rate of suspected pesticide infractions annually. The following list indicates future pesticide reduction and invasive species management priorities:

- **ISAP updates** – The City’s ISAP was initially endorsed in 2016 and included a list of priority species based on an assessment to determine the potential risk that a given species poses to the community. Staff are updating the City’s invasive species risk assessment to determine if changes or additions to the ISAP’s priority species list is required. Staff will bring forward updates to Council following the assessment, as needed;

- **Pesticide Use Control Bylaw No. 8514 improvements** – Despite all the voluntary compliance in the community under this bylaw, staff note that provincial requirements to control invasive species under the *Weed Control Act* is ineffective due to the lack of provincial enforcement. Staff are assessing options to address noxious weeds located on private property that encroach onto city lands and infrastructure. Staff will bring forward updates to Council following the assessment, as needed;
- **Pesticide use permits** – The City currently manages knotweed and parrots feather to protect infrastructure, reduce flooding and maintain biodiversity. Parrots feather is currently being manually removed as are stands of knotweed along the dike when located below the high water mark, resulting on some plants being left untreated due to provincial restrictions. The province manages the use of pesticides near or in a waterbody through a pesticide use permit process. To reduce the City's climate related risks such as flooding staff are considering assessing the benefits of a pesticide use permit to address persistent parrot's feather and knotweed infestations for these instances. Staff will look into the process for obtaining a provincial permit including guidelines for public and stakeholder engagement and bring forward updates to Council following the assessment, as needed;
- **Early detection and rapid response** – The City will continue to identify, track and control emerging invasive species such as Japanese beetle, Asian hornet and zebra mussels to protect Richmond from environmental or socioeconomic impacts. Local business owners and residents can prevent the spread by restricting the sale, use and disposal of invasive species. Staff will continue to promote public awareness related to invasive species with residents and business owners; and
- **Partnerships and Research** – Local and regional partnerships with non-government organizations and local experts can result in more effective and collaborative solutions. The City will continue to seek opportunities to partner with local, regional, and provincial agencies to supplement invasive species management, including assessing alternatives to pesticides, supporting pollinators, and identifying new species such as invasive cattails. Risk assessments for new invaders and shifting best practices due to changes associated with climate change will be essential to effective management in future years. The City will continue to explore opportunities for partnerships with academic institutions such as University of British Columbia and Kwantlen Polytechnic University, for research on invasive species ecology and best management practices.

### Financial Impact

None at this time. Funding received through annual capital or operating budgets create capacity for staff to deliver invasive species initiatives on an annual basis. Any additional funding needs will be brought forward for Council consideration as needed.

## Conclusion

The City's Enhanced Pesticide Management Plan and Invasive Species Action Plan continue to be innovative and proactive in their approach to the management of invasive species in the City. As the Invasive Species Action Plan is by design a living document, staff will work to re-evaluate and revise management and species priorities in the coming two years. The establishment and spread of invasive species will continue to challenge staff and the wider public to find creative solutions to management objectives, and initiatives like the Enhanced Pesticide Management Program and Invasive Species Action Plan will provide science-based guidance to decrease the ecological and socioeconomic impacts associated with the long-term management of invasive species.



Chad Paulin, M.Sc., P.Ag.  
Manager, Environment  
(604-247-4672)

Att. 1: Pesticide Reduction & Invasive Species Management – 2023 Update

City of Richmond

# **Pesticide Reduction & Invasive Species Management – 2023 Update**

Enhanced Pesticide Management Program & Invasive Species Action Plan







Giant hogweed specimen – If exposed, Giant Hogweed's sap can cause severe burns

Richmond City Council adopted the Enhanced Pesticide Management Program and the *Pesticide Use Control Bylaw No. 8514* in 2009 with the objective of reducing the use of traditional pesticides, based on a level of risk and benefit. The City's program has been recognized for its integrated management approach, which includes educational programming and outreach initiatives that are designed to empower residents with information related to the effects of pesticides and potential alternatives.

Subsequently, the Invasive Species Action Plan was adopted under the Enhanced Pesticide Management Program (EPMP) in 2015, which has allowed for a strategic, risk-based approach to prioritize the management of invasive species that pose immediate and long term threats to civil infrastructure, local ecology, and human health. As Richmond experiences climate change and associated ecological shifts that influence the proliferation of invasive species, the Invasive Species Action Plan (ISAP) enables Richmond to adapt and respond to these shifts, as well as to changing senior and local government priorities.

Richmond's EPMP and ISAP include detailed strategies and actions organized around the following four pillars to achieve City initiatives:

- **Leadership & Innovation**
- **Partnership**
- **Public Outreach & Engagement**
- **Invasive Species Treatment**

This document follows an update issued in 2021. The information below summarizes achievements in 2022 and 2023 in implementing the EPMP and ISAP, and highlights future actions. The program continues to take preventative approach to integrated pest management, as well as considering potential impacts from forecasted changes in climate and local ecology.



The City is also committed to identifying invasion pathways to prevent further introduction and establishment of new invaders.

## LEADERSHIP & INNOVATION

### KEY ACHIEVEMENTS

**Technical innovation:** The City completed treatment of an infestation of Brazilian elodea, an aggressive aquatic invader, in 2021. In partnership with the province, staff utilized a novel suction dredge technology to remove Brazilian elodea from a water feature without the use of pesticides. The technology is a custom, water-based water craft that is able to extract and filter aquatic threats such as Brazilian elodea through a specialized suction technology. Staff are now actively monitoring the historic infestation site near Garry Point Park for regrowth of Brazilian elodea. To date since the conclusion of the pesticide-free trial in 2021, no regrowth has been noted at any time.

2  
years  
of no observed  
regrowth of a historic  
Brazilian elodea  
infestation site

**Technical contributions and partnerships:** Staff continue to contribute technical insight and content to a regional document series developed by the Metro Vancouver Regional District and Invasive Species Council of Metro Vancouver. The document series currently consists of 22 technical documents (an increase of 5 since 2021) and associated fact sheets that provide public education on invasive species management best practices.

**City-wide pollinator award:** Richmond's City-wide pollinator program was awarded the Canadian Association of Municipal Administrators, Environmental Leadership and Sustainability Award in 2022. The award recognizes the City's proactive approach to supporting chemical-free practices and protect pollinator habitat through community programming, including maintaining over 10,000 square metres of pollinator habitat in Richmond; equivalent to the size of approximately two football fields.

5  
additional technical  
Best Management  
Practice documents  
published

**Canadian Bee City certification:** The City became the sixth city in BC to become a Bee Certified City by Pollinator Partnership Canada in 2022. Bee City Canada is a voluntary membership program that recognizes Local Government efforts to protect pollinators and their ecosystems through conservation, education, and research.

**Public notification:** To address community concerns related to the City's knotweed treatment program, staff improved the public notification process in 2017. The process notifies residents near treatment sites, through letters, of upcoming treatment activities – over 350 letters have been sent annually to residents notifying them of nearby knotweed treatment activities. The notification process has since been adopted to additional invasive species management programs, notably the Japanese beetle treatment that occurred in spring 2023.

over 700  
public notifications  
sent through  
knotweed  
management

Pollinators are supported with over 27,000 square metres  
of known habitat throughout the City





## PARTNERSHIPS

### KEY ACHIEVEMENTS

**Province of British Columbia:** The City worked closely with the Province of BC to develop and maintain standards for Early Detection and Rapid Response, a “proactive approach to managing new invasive species to BC that prevents establishment and subsequent impacts through targeted species risk assessment, verification, containment, and eradication”. This partnership is maintained yearly through grant funding for education and awareness within the City, as well as a standing objective to collaborate on any new species that present themselves in City limits.

**Invasive Species Council of Metro Vancouver / British Columbia:** The Invasive Species Councils of Metro Vancouver and British Columbia provide assistance in research, confirmation of invasive species, educational materials, and public engagement. The City participates in regional programs hosted by the Invasive Species Councils, such as Don’t Let it Loose, Clean Drain Dry, and Plantwise – programs designed to encourage proper management of invasive species and native planting.

**Ducks Unlimited Canada:** City staff are active participants in Metro Vancouver’s invasive cordgrass working group, which include monitoring sites on Sturgeon Bank since 2003. The City also supported a regional Pesticide Use Permit renewal for the project in 2019. To date, only one seedling has been detected on Roberts Bank, and the individual was removed by hand in the field by program consultants.

**Canada Food Inspection Agency:** When requested, the City supports investigations and placement of traps at various sites in search of a variety of invasive insects that are a threat to the region, notably the presence of Japanese beetle since 2018.

**Participation in regional management groups:** The City participates in both the Regional Invasive Species Working Group, and the Soil and Invasive Species Working Group. The groups are both tasked with increasing working regional knowledge of invasive species management best practices, and identifying gaps in knowledge as well as supporting research and novel management techniques.

**Academic / research institutions:** City staff maintain working relationships with academic institutions, to bolster capacity for correct identification of invasive organisms to the species level. Of note is work conducted with Ducks Unlimited on invasive cattails and with KPU identifying and protection of Vancouver Island beggarticks.



Provincial partnership for Brazilian elodea management



Japanese beetle have been placed throughout the City – a single individual was detected within the City in 2022.

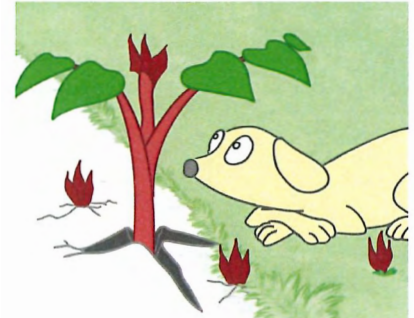


Water feature managed for Brazilian elodea in partnership with the Province

## PUBLIC OUTREACH & ENGAGEMENT

### KEY ACHIEVEMENTS

**Knotweed video:** As part of the suite of educational materials staff provide to residents on invasive species management, an animated video is being produced on knotweed impacts and management. The video will provide information on knotweed biology and management tactics, and will further encourage residents to conduct their own research, or speak with a staff representative if they want to learn more. The video is expected to be completed before the end of 2023, and will be published on the City's website and social media channels.



Screen capture of forthcoming knotweed educational video

**Richmond Nectar Trail:** Launched in 2020 in partnership with Border Free Bees, the Nectar Trail initiative concluded in summer of 2022. The initiative activated the community and improved habitat connectivity for native pollinators in the urban environment. At its conclusion, over 60 sites throughout the City that include private properties, city facilities, schools, and parks were registered; all committed to maintaining pesticide-free habitat to benefit local pollinators.

**Community workshop programming:** Free community-led workshops are offered annually to residents through the EPMP that includes a variety of education programming to inform the community about the pesticide restrictions and promote natural gardening and pest solutions. This includes a series of natural gardening workshops to help residents learn proper plant care and sustainable pest solutions. Over 30 environment focused workshops were delivered through various City departments in 2022 and 2023.

**Public accessibility to information:** Staff maintain dedicated email and phone lines and encourage the public to contact staff with any inquiries related to pesticides and invasive species. Staff have responded to over 100 invasive and pesticide related resident inquiries via the email and phone hotlines in 2022 and 2023 to date.

**Support to local pesticide retailers:** Ongoing support is given to local pesticide retailers to assure compliance with changing provincial legislation, and the City's *Pesticide Use Control Bylaw No. 8514*.

**Community Invasive Species Pulls:** Through various programs, City staff provide opportunities for residents to get involved with hands-on invasive species management in their communities and parks. Weed pulls, focussing on blackberry and other mechanically controllable invasive species, and subsequent replanting of the sites contribute to invasive management and site restoration efforts in Richmond. In 2022 and 2023, 9 events were held and attended by 180 residents

64

sites registered in the Richmond nectar trail

180

volunteers engaged through community weed pulls and restoration events



**Invasive species action month:** The City participates in the provincially-recognized Invasive Species Action Month to raise community related in invasive species in Richmond. Weekly themed displays were featured in the City Hall galleria and Richmond Public Library, as well as use of social media during the month to educate residents on the importance of invasive species management.

**Demonstration lawns:** Traditional grass lawns are susceptible to Chafer beetle infestation, drought, and offer lower habitat benefits. The City maintains four demonstration plots at Terra Nova Park to display practical alternatives to traditional grass lawns. Unlike conventional grasses, the alternatives presented at Terra Nova can reduce the reliance on pesticides, are drought tolerant, and are aesthetically pleasing.

**City Nature Challenge 2022/2023:** The City Nature Challenge is a month-long event in which residents were encouraged to document Richmond's biodiversity through the iNaturalist application on mobile devices. In addition to native flora and fauna, residents were encouraged to identify and report invasive species they may have come across. Reports that came through during the challenge include yellow flag iris, Himalayan blackberry, and reed canary grass.

**Social media:** Social media platforms such as Twitter and Instagram continue to be utilized to communicate topics related to invasive species. Posts about events such as Invasive Species Action Month and occurrences of new potential invaders such as the northern giant hornet and Japanese beetle have effectively notified residents and continue to receive positive feedback when issued. In 2022 and 2023 to date, 21 social media posts related to invasive species prevention and management have been published on the City's communications channels.

**Public notification:** During the course of regular field work, if staff identify invasive species on or near private land, owners will be notified via letters informing them of risks, best management practices, and offering city staff assistance in steps to take. Letters are met with appreciation, typically with residents responding with thanks and a desire to learn more about the identified species and how best to manage them.



A post from the City's Instagram account, highlighting Invasive Species Action Month

21

social media posts published highlighting invasive species and City programs



## INVASIVE SPECIES MANAGEMENT

### KEY ACHIEVEMENTS

**Knotweed:** The program currently manages 261 knotweed sites, equal to approximately 2.5 hectares. Most of these sites are currently in a monitoring phase, with no observed regrowth. Knotweeds are a top 10 invasive species for control in BC and a priority species in the ISAP. Knotweeds are also designated as provincially noxious under the Weed Control Act and must be controlled. Richmond has implemented an annual treatment program on city land, which continues to successfully reduce the spread of knotweed. Residents are also required by the Province to control knotweed on private property. The City also maintains various informative material on Richmond’s website to support residents with the management of knotweed on private land.

261

actively managed and  
monitored knotweed  
sites

**Himalayan blackberry:** Himalayan blackberry is designated as a regional containment and control species by the province that is incredibly difficult to manage but it is not listed as a noxious species. In 2022 and 2023, over 20 hectares of blackberry has been removed from City properties and infrastructure from development, enhancements and operational activities.

over 20 ha

Himalayan blackberry  
managed

**European chafer beetle program:** The City successfully manages over 3 hectares of public property with pesticide-free alternatives and biocontrol products in response to Chafer beetle infestations. Chafer beetles feed on the roots of turf grass and can cause serious damage to green spaces. They are a nuisance pest as they infest traditional lawns and attract predators such as crows, skunks, and raccoons that damage property as they dig for larvae. Staff introduced a 50% rebate for residents to control Chafer beetle infestations with nematodes. Residents were encouraged to sign up for the rebate using the MyRichmond portal and distribution was facilitated at the City’s Works Yard.

5 km

parrot’s feather  
monitored and  
managed

**Parrot’s feather:** Parrot’s feather is an aggressive aquatic invader that impacts the City’s drainage system. The City’s drainage and environment staff continue to take an aggressive approach to management when infestations grow large enough to impede flow. In 2022 and 2023, approximately 5000 linear metres of historic parrot’s feather sites were surveyed and had material removed where deemed necessary – costing over \$70,000 for person-time, materials, and tipping fees of parrot’s feather being removed from the City’s drainage network. Staff have also noted a reduction in biomass year to year utilizing mechanical control.

**Japanese beetle response:** The Japanese beetle is an invasive insect that is exceptionally efficient at feeding on a wide variety of plants and an infestation in BC poses a significant threat to the province’s agricultural sector. The federal Canadian Food Inspection Agency and BC Ministry of Agriculture manage the Japanese beetle response efforts in BC. Staff were notified in September 2022 that a single beetle was identified in Richmond’s City Center Neighborhood. Following a provincial order to treat this area, the City treated approximately 1 hectare of right of way and boulevards in this area in 2023. Over 400 notification letters were sent out to residents in the area prior to treatment and appropriate signage was placed in the area. The federal government resumed its regional Japanese

1 ha

City rights-of-way and  
boulevards treated for  
Japanese beetle  
prevention



beetle trapping and monitoring program in April 2023. No new detections have been reported in Richmond since 2022.

**Brazilian elodea management:** City staff are actively monitoring a historic infestation site near Garry Point Park for regrowth of Brazilian elodea. To date since the conclusion of a pesticide-free trial in 2021, no regrowth has been noted at any time.

**Feral rabbits:** Feral rabbits in Richmond pose a threat to natural spaces, to the agriculture sector, and to local ecology and biodiversity. In a pointed effort to manage the population in Richmond, staff conducted a field study to estimate distribution and population of existing feral rabbits in Richmond’s public lands, as well as a literature review on the impacts of feral rabbits to better guide management options, and identified potential management practices of feral rabbits. Staff are currently examining the results of these studies and intend to implement practices to control the current rabbit population, and decrease expansion in the future.

**Rodent management:** The City has developed its own integrated pest management approach for rodents since 2021 that has included a rodenticide ban, private property home assessments, complaint response and new rodent abatement requirements for demolition applications. Staff coordinated 31 private property assessments and responded to 140 community inquiries in 2022 and 2023 to date.



Best management practices for pet rabbit surrenders have been communicated via social media and other communication channels

140

resident rodent inquiries addressed





## FUTURE OUTLOOK

**Updating the ISAP:** The City's ISAP was initially endorsed in 2016 and included a list of priority species based on an assessment to determine the potential risk that a given species poses to the community. Staff are updating the City's invasive species risk assessment to determine if changes or additions to the ISAP's priority species list is required. Staff will bring forward updates to Council following the assessment, as needed.

**Pesticide use permits:** The City currently manages knotweed and parrot's feather to protect infrastructure, reduce flooding and maintain biodiversity. Parrot's feather is currently being manually removed as are stands of knotweed along the dike when located below the high water mark, resulting on some plants being left untreated due to provincial restrictions. The province manages the use of pesticides near or in a waterbody through a pesticide use permit process. To reduce the City's climate related risks such as flooding, staff are considering assessing the benefits of a pesticide use permit to address persistent parrot's feather and knotweed infestations for these instances. The process for obtaining a provincial permit including guidelines for public and stakeholder engagement will be investigated. Staff will bring forward updates to Council following the assessment, as needed.

**Early detection and rapid response:** The City will continue to identify, track and control emerging invasive species such as Japanese beetle, Asian hornet and zebra mussels to protect Richmond from environmental or socioeconomic impacts.

**Business and public outreach:** Local business owners and residents can prevent the spread by restricting the sale, use and disposal of invasive species. Staff will continue to promote public awareness related to invasive species with residents and business owners.

**Support to academic institutions:** Local and regional partnerships with non-government organizations and local experts can result in more effective and collaborative solutions. The City will continue to seek opportunities to partner with local, regional, and provincial agencies to supplement invasive species management, including assessing alternatives to pesticides, supporting pollinators, and identifying new species such as invasive cattails. Risk assessments for new invaders, and shifting best practices due to changes associated with climate change will be essential to effective management in future years. The City will continue to explore opportunities for partnerships with academic institutions such as University of British Columbia and Kwantlen Polytechnic University, for research on invasive species ecology and best management practices.

**Partnerships:** Local and regional partnerships can result in more effective and collaborative solutions. The City will continue to seek opportunities to partner with local, regional, and provincial agencies to supplement invasive species management, including assessing alternatives to pesticides, supporting pollinators, identifying new species such as invasive cattails.

**Pesticide Use Control Bylaw update / Invasive Species Bylaw:** Despite all the voluntary compliance in the community under this bylaw, staff note that provincial requirements to control invasive species under the Weed Control Act is ineffective due to the lack of provincial enforcement. Staff are assessing options to address noxious weeds located on private property that encroach onto city lands and infrastructure. Staff will bring forward updates to Council following the assessment, as needed.



## City of Richmond

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**PWT - 59**





# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee

**Date:** September 14, 2023

**From:** Milton Chan, P.Eng  
Director, Engineering

**File:** 10-6000-01/2023-Vol  
01

**Re:** **Proposed 2024 Paving Program**

### Staff Recommendation

That the staff report titled, "Proposed 2024 Paving Program," dated September 14, 2023, from the Director, Engineering be received for information.

Milton Chan, P.Eng  
Director, Engineering  
(604-276-4377)

Att. 3

| REPORT CONCURRENCE                |                                     |                                       |
|-----------------------------------|-------------------------------------|---------------------------------------|
| <b>ROUTED TO:</b>                 | <b>CONCURRENCE</b>                  | <b>CONCURRENCE OF GENERAL MANAGER</b> |
| Roads & Construction              | <input checked="" type="checkbox"/> |                                       |
| <b>SENIOR STAFF REPORT REVIEW</b> | <b>INITIALS:</b>                    | <b>APPROVED BY CAO</b>                |
|                                   |                                     |                                       |

## Staff Report

### Origin

This report supports Council's Strategic Plan 2022-2026 Focus Area #2 Strategic and Sustainable Community Growth:

*Strategic and sustainable growth that supports long-term community needs and a well-planned and prosperous city.*

*2.3 Ensure that both built and natural infrastructure supports sustainable development throughout the city.*

*2.4 Enhance Richmond's robust transportation network by balancing commercial, public, private and active transportation needs.*

The annual Paving Program is required to maintain the City's road network at current operating levels, as well as reduce the need for costly repairs. Staff have developed a prioritized list of locations to be included in the 2024 Paving Program.

### Analysis

The scope of work includes the milling and paving of roads and asphalt surfaces in priority order, as identified by the City's Pavement Management System and staff. This also includes preparatory work such as curb and gutter repairs. The Pavement Management System takes into account items such as the age, structure and current condition of the road. Updated pavement deflection data is gathered to ensure that the Pavement Management System model results are accurate. The data is being gathered on an assortment of road types including arterial roads, the TransLink Major Road Network (MRN), recently resurfaced segments, and sections with substantial surface cracking. TransLink provides funding for the MRN projects. Non-MRN projects are funded by the City.

Attachment 1 provides a list of the primary paving sites to be included in the 2024 Paving Program. As with past years, some of the identified paving locations may not be able to be completed due to conflicts with development projects, which are unknown at this time. Any deferred primary paving locations would be replaced with the secondary paving locations, should the seasonal paving restrictions permit. These secondary locations are listed in Attachment 2. Two maps of the proposed paving locations – Richmond West and Richmond East – are included in Attachment 3.

In most years, some paving work is required to address unforeseen road condition issues that arise during the year, such as settling utility trenches. These are added to the Paving Program throughout the course of the year. Since the specific locations are not known at this time they are not shown on the attached location maps.

Since 2021, escalation of paving costs has exceeded annual budget increases due to the increase in global oil and gas prices, supply chain issues and inflation. Recent years have also seen accelerated road deterioration, which results in increased costs due to the additional rehabilitation and gravel base repair work required to repair and repave the roadway. This deterioration is a result of high traffic volumes and harsh winter conditions and is compounded by deferral of repair works. As a result of these increased costs, some project locations, including on the City's Major Road Network (MRN) have been deferred to future years.

The Ageing Utility and Road Infrastructure Planning – 2022 Update report identified the required annual funding levels for roads and road assets. To manage funding gaps it was noted that staff will bring forward paving program funding recommendations that will include on-going capital funding, combined with one-time allocation of surpluses to meet the five year capital needs of the roadway paving program. Aligned with this, staff are preparing additional level requests for assessment through the 2024 Capital Budget process that would allow for completion of all the priority locations identified in this report.

The procurement of this year's Paving Program is tentatively scheduled to be issued to the market in November 2023. Historically, early procurement of this program has resulted in increased competitiveness, and lower costs to the City. By soliciting this work early, staff are taking measures to ensure that paving contract procurements receive competitive pricing and provide good value to the City. This includes monitoring the market to ensure ideal timing to conduct procurement, and the potential of including a variable cost, commodity price indexing structure in the paving contracts.

The 2024 Paving Program also reflects the City's environmental initiatives by allowing the use of recycled asphalt. In alignment with the City's sustainability goals, the successful bidder will be encouraged to employ sustainable methodologies, practices and materials that would assist in reducing green house gas emissions. If market conditions indicate that favourable pricing would be received by issuing to the market early, the procurement process will note that the contract award is subject to approval of the 2024 Capital Budget by Council.

### Financial Impact

Proposed funding for the 2024 Paving Program has been submitted as part of the 2024 Capital Budget as follows:

Table 1. Proposed 2024 Paving Program Budgets

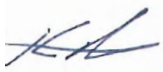
| <b>Proposed Funding</b>                         | <b>Amount (\$)</b>  |
|---|---------------------|
| 2024 Annual Asphalt Re-Paving Program – MRN     | \$ 3,370,000        |
| 2024 Annual Asphalt Re-Paving Program – Non-MRN | \$ 3,940,000        |
| <b>Total Proposed Funding</b>                   | <b>\$ 7,310,000</b> |

Award of the 2024 Paving Program will occur once the 2024 Capital Budget is approved by Council.



### Conclusion

Staff have prepared a list of priority locations for the 2024 Paving Program and the procurement documents are being prepared. Contract award and commencement of paving will occur once the 2024 Capital Budget is approved by Council.



Kevin Roberts, P. Eng.  
Acting Manager, Engineering Design & Construction  
(604-204-8512)



Wasim Memon  
Supervisor – Inspections  
(604-247-4189)

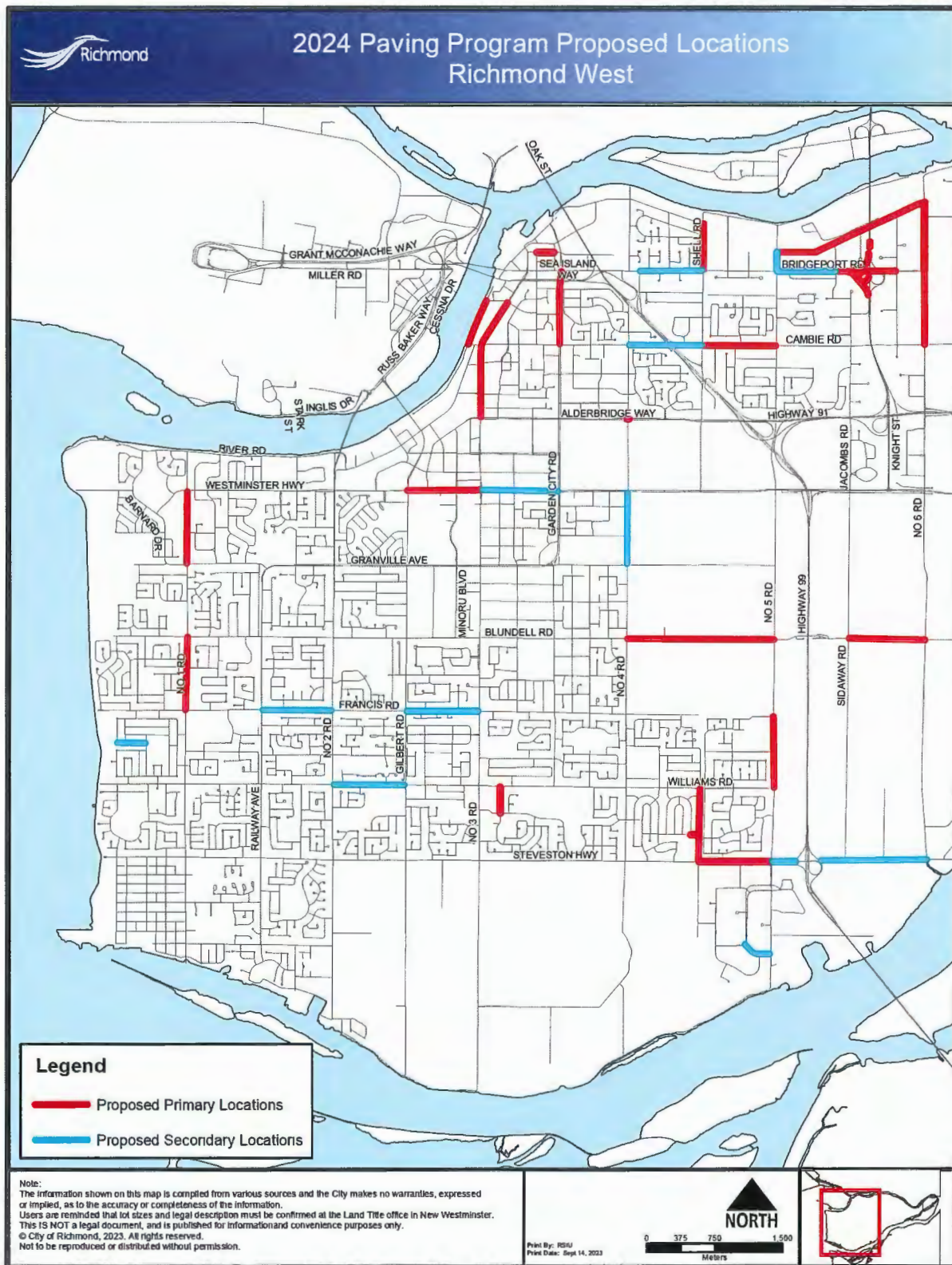
- Att. 1: Proposed 2024 Paving Program – Primary Locations  
2: Proposed 2024 Paving Program – Secondary Locations  
3: 2024 Paving Program Proposed Locations – Richmond West and Richmond East

### **PROPOSED 2024 PAVING PROGRAM – PRIMARY LOCATIONS**

| <b>Location</b>   | <b>Road Type</b> |
|---|------------------|
| Knight Street (Southbound Lanes from Bridge Deck to 50m South)    | MRN              |
| Knight Street Southbound On and Off Ramps at Bridgeport Road      | MRN              |
| Bridgeport Road (Viking Way to Sweden Way)                        | MRN              |
| Cambie Road (Shell Road to No. 5 Road)                            | MRN              |
| No. 3 Road (Alderbridge Way to Capstan Way)                       | MRN              |
| No. 4 Road and Alderbridge Way Intersection                       | MRN              |
| No. 6 Road (Bridgeport Road to Cambie Road)                       | MRN              |
| Steveston Highway (Westbound Lanes from Shell Road to No. 5 Road) | MRN              |
| Westminster Highway (North of Highway 91 to Mclean Avenue)        | MRN              |
| Westminster Highway (Gilbert Road to No. 3 Road)                  | MRN              |
| Beckwith Road (Sexsmith Road to Smith Street)                     | Non-MRN          |
| Blundell Road (No. 4 Road to No. 5 Road)                          | Non-MRN          |
| Blundell Road (Sidaway Road to No. 6 Road)                        | Non-MRN          |
| Garden City Road (Cambie Road to Bridgeport Road)                 | Non-MRN          |
| Leonard Road (Ryan Road to Williams Road)                         | Non-MRN          |
| Maddocks Road (Aintree Crescent to Shell Road)                    | Non-MRN          |
| No. 1 Road (Francis Road to Blundell Road)                        | Non-MRN          |
| No. 1 Road (Westminster Highway to Granville Avenue)              | Non-MRN          |
| No. 5 Road (Williams Road to Kingsbridge Drive)                   | Non-MRN          |
| No. 6 Road (Bridgeport Road to Vulcan Way)                        | Non-MRN          |
| River Road (Cambie Road to Capstan Way)                           | Non-MRN          |
| Shell Road (Steveston Highway to Williams Road)                   | Non-MRN          |
| Shell Road (Bridgeport Road to River Drive)                       | Non-MRN          |
| Vulcan Way (No. 5 Road to No. 6 Road)                             | Non-MRN          |

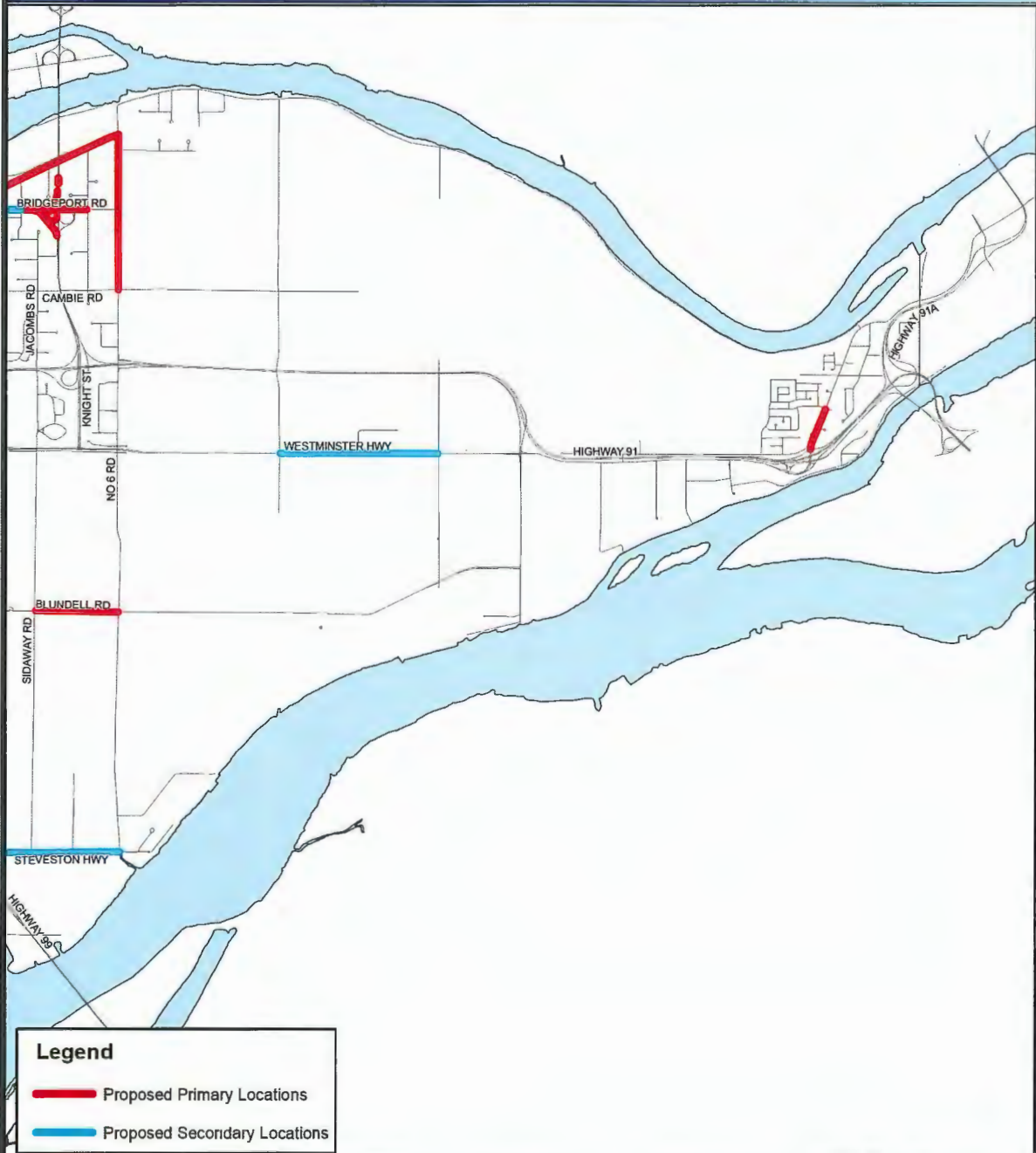
## **PROPOSED 2024 PAVING PROGRAM – SECONDARY LOCATIONS**

| <b>Location</b>   | <b>Road Type</b> |
|---|------------------|
| Bridgeport Road (St. Edwards Drive to Shell Road)                         | MRN              |
| Bridgeport Road (No. 5 Road to Sweden Way)                                | MRN              |
| Steveston Highway (No. 5 Road to Hwy 99 limits)                           | MRN              |
| Steveston Highway (Highway 99 limits to No. 6 Road)                       | MRN              |
| Westminster Highway (Westbound Lanes from Garden City Road to No. 3 Road) | MRN              |
| Cambie Road (No. 4 Road to Shell Road)                                    | MRN              |
| No. 4 Road (Granville Avenue to Westminster Highway)                      | Non-MRN          |
| No. 5 Road (Bridgeport Road to Vulcan way)                                | Non-MRN          |
| Francis Road (Railway Avenue to No. 2 Road)                               | Non-MRN          |
| Francis Road (Gilbert Road to No. 3 Road)                                 | Non-MRN          |
| Westminster Highway (No. 7 Road to No. 8 Road)                            | Non-MRN          |
| Williams Road (Parsons Road to Gilbert Road)                              | Non-MRN          |
| Machrina Way (Horseshoe Way to No. 5 Road)                                | Non-MRN          |
| Trumond Avenue (Wellmond Road to Gormond Road)                            | Non-MRN          |





## 2024 Paving Program Proposed Locations Richmond East







# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee

**Date:** September 20, 2023

**From:** Suzanne Bycraft  
Director, Public Works Operations

**File:** 10-6000-01/2023-Vol  
01

Lloyd Bie, P.Eng.  
Director, Transportation

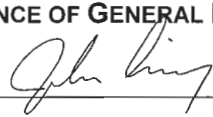

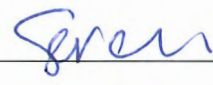
**Re:** Safety Measures for Heavy Trucks

### Staff Recommendation

That staff report titled "Safety Measures for Heavy Trucks", dated September 20, 2023, from the Director, Public Works Operations and Director, Transportation be received for information.

Suzanne Bycraft  
Director, Public Works Operations  
(604-233-3338)

Lloyd Bie, P. Eng.  
Director, Transportation  
(604-276-4131)

| REPORT CONCURRENCE   |  |
|--|--|
| CONCURRENCE OF GENERAL MANAGER<br> |  |
| SENIOR STAFF REPORT REVIEW   | INITIALS:<br> |
| APPROVED BY CAO<br>                |  |

## **Staff Report**

### **Origin**

The following referral was made at the September 21, 2022 Public Works and Transportation Committee Meeting regarding safety measures for heavy trucks:

*“(1) That staff investigate and report back on the implications of the City of Richmond owned and contracted heavy trucks to be mandated to have side guards;  
(2) That we encourage the installation of additional blind spot side mirrors and the use of back up cameras;  
(3) That we review bike lanes in terms of turning conflicts and mitigate to reduce risk to vulnerable road users;  
(4) That we advocate with regional, provincial and federal authorities to create consistent framework for truck operators;  
(5) That we advocate to ICBC and truck-driving associations to deliver increased driver education to better inform of the responsibilities regarding vulnerable road users; and  
(6) That staff report back on any immediate actions that can be taken to improve cyclist safety.”*

This report responds to the referral.

This report supports Council’s Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

*Community safety and preparedness through effective planning, strategic partnerships and proactive programs.*

### **Background**

The City proactively implements a number of projects and programs every year to improve road safety, particularly for vulnerable road users (pedestrians, cyclists, etc.). Although staff are not aware of any incidents in Richmond between heavy trucks and vulnerable road users (VRUs), concerns about potential incidents have emerged.

A key aspect of traffic safety is safe vehicle design in minimizing collision severity between heavy vehicles and VRUs. Research indicates the most proven safety measure in mitigating the conflict between heavy trucks and cyclists is ongoing and up-to-date driver training and assessment programs. Physical alterations to heavy trucks can include the addition of side guards. Collision Avoidance Systems (CAS) for driver assisted camera technology can also help to improve visibility and provide warning systems to avoid conflicts between heavy trucks and VRUs.

### **Analysis**

As part of evaluating opportunities to minimize conflicts between heavy trucks and VRUs, staff reviewed safety measures including current City practices and emerging vehicle technologies. Staff also consulted with regulators and industry representatives.

The following section provides staff's findings regarding preventative measures to address heavy truck safety.

#### Current Approach to Commercial Vehicle Safety

##### *Safer Roads*

The City proactively implements road infrastructure improvements to increase safety for VRUs. Staff have assessed high-risk places and collision prone areas and installed safety measures to reduce conflicts between vehicles and VRUs.

Projects such as the Top 20 Collision-Prone Intersections and implementation of protected cycling facilities are reducing the conflict zones between VRUs and other vehicles. City projects that improve road safety for VRUs include:

- *Top 20 Collision-Prone Intersections in the City:* Intersection upgrades include safety enhancements for VRUs by discouraging speeding and providing additional space and priority for pedestrians and cyclists. All short-term safety improvement identified through the study have been implemented. Medium-term safety measures are being implemented via annual capital projects.
- *Removal of Channelized Right-Turn Islands:* The Top 20 Collision-Prone Intersection study identified channelized right-turns as a safety hazard for VRUs. Two intersections have been modified with the removal of channelized right-turns and four locations are approved for construction through the City's capital plans. Additional locations are identified as part of future capital plans for Council consideration. The removal of channelized right-turn islands slows vehicle speeds and improves safety between motorists and VRUs crossing the intersection.
- *Cycling Facility Design and Upgrades:* Protection from adjacent traffic is implemented on Major Street cycling facilities to separate cyclists from adjacent traffic (e.g. Alderbridge Way multi-use pathway, Garden City Road delineators, Westminster Highway pathway, etc.).
- *Traffic Management Plans During Construction:* Where cycling facilities exist, traffic management plans are required to maintain a safe cycling route adjacent to construction zones.

The City's Traffic Safety Advisory Committee (TSAC) provides input, participates in the on-going and planned road safety initiatives, and provides feedback on a wide range of traffic safety issues. TSAC has representation from ICBC and staff will add commercial vehicle safety to future agendas for meetings of this multi-disciplinary committee.

Staff also engage in partnerships with various industry representatives such as ICBC as well as RCMP to administer safe driving campaigns. Most recently, staff worked with ICBC and the RCMP on a Distracted Driving campaign to educate Richmond commuters of the dangers of distracted driving. Staff will also be engaging and supporting ICBC and the RCMP in launching a Pedestrian Safety campaign in late October 2023 where an ICBC Road Safety and Community Coordinator and an RCMP staff member will deliver presentations and safety talks for City operations staff.

*Provincial Commercial Vehicle Regulations*

To become a Class 1 licensed commercial driver, ICBC has a new Class 1 Mandatory Entry-Level Training (MELT) requirement. The Class 1 MELT course includes practical in-yard training, on-highway driving and theoretical learning components. The National Safety Code (NSC) is a set of national standards supported by provincial regulations. The program establishes management and performance requirements for commercial carriers. The NSC standards establish minimum safety standards for commercial vehicles and drivers.

ICBC's new commercial vehicle operator training focuses on NSC compliance for commercial vehicle safety, hours of service requirements, load securement, and other fundamentals like air brakes and professional on-highway driving skills.

*City Heavy Vehicle Driver Safety Training and Assessments*

Through its Fleet Operations section, the City has a robust training and driving assessment program for staff who are required to drive a City vehicle, particularly for the operation of heavy trucks. The City follows National Safety Code standards for commercial drivers and provides in-house expertise for training, accident investigations, corrective action follow up and on-going assessments. A higher standard and additional training is required for City operators of heavy trucks.

In the past two and a half years, 180 heavy equipment training sessions with 518 training attendees have been undertaken. From 2014 to 2022, City owned tandem and single axle dump trucks travelled 1.7 million kilometres, or an average of 188,889 kilometres per year. The City's accident data to date indicates no instances of collision involving injury between City trucks or contracted heavy vehicles and VRUs. This is largely attributable to the standards in place for fleet training and assessments as well as monitoring contractor safety.

Evaluation of Commercial Vehicle Safety Measures*Side Guards*

Staff researched vehicle side guards. Side guards are brackets or bars that are attached to the side of a heavy truck, between the front and rear wheels on both sides of the vehicle. These brackets are intended to reduce the likelihood of a VRU being hit by the side of the truck and subsequently dragged under the truck and becoming caught under the tires and wheels.

Staff have reviewed regulatory aspects and liaised with regulatory organizations such as the Ministry of Transportation and Infrastructure (MOTI), Transport Canada, British Columbia Trucking Association (BCTA) and consultants that work on investigations related to VRU incidents.

Through these research findings and consultation with regulatory organizations and industry representatives, staff have found that side guards are not an optimal approach to providing additional safety to VRUs, particularly for trucks used in an operations environment.

Side guards can present safety and operational challenges such as:

- Side guards may eject or divert a VRU into oncoming traffic or other lanes, potentially causing a secondary event with another vehicle or with the road/sidewalk surface.
- If a VRU gets trapped under a vehicle, first responders may not be able to provide assistance due to limited access.
- Side guards may help prevent a VRU from going under a truck, however, they do not reduce the potential life altering impact of hitting a rigid side guard.
- Side guards would need to be removed at dumping facilities due to uneven terrain and to avoid damage that would result when items such as wood or rebar get caught or projected under the truck. This is not practical.
- Side guards have to be removed during snow and ice events due to the possibility of snow build up between the side guard and back wheels, which can impede and impact driving conditions, creating a potential hazardous situation.
- Side guards add additional gross vehicle weight therefore increasing fuel consumption and impacting the City's efforts to reduce greenhouse gas emissions.
- There is a scarcity of local product availability per staff's research findings with local vendors.

While some countries and various cities have mandated the use of side guards, Transport Canada has stated that there are no conclusive studies which demonstrate the effectiveness of side guards in preventing casualties. Transport Canada studied road casualty data and actual collision investigations, and concluded in a 2010 study that; "At present, there is no way to accurately quantify the potential reduction in VRU death or serious injury as a result of side guard installation." Therefore, side guards are not a regulatory requirement in Canada or the United States, nor is it anticipated that they will become mandated.

#### *Collision Avoidance Systems*

A Collision Avoidance System (CAS), also known as a Driver Assistance System (DAS), is a safety system designed to prevent a collision or decrease its severity through visual, auditory, and/or haptic warnings to alert the driver in advance. These systems help with blind spot detection and assist in early detection of VRUs.

#### *How the technology works:*

- Sensors/cameras are placed on various locations of a vehicle, continuously monitoring the driving environment in order to detect pedestrians and cyclists hidden in the vehicle's blind spots. Upon detection, the driver is alerted prior to any potential contact with VRUs.
- Pedestrian and blind spot detection utilizes dynamic detection angles to constantly monitor the vehicle's blind spots on the right- and left-hand sides of the vehicle.
- A yellow visual signal warns the driver that a pedestrian, cyclist or motorcyclist has been detected in the vehicle's blind spot and to act with caution.
- A red visual signal accompanied by an audio alert warn the driver of the risk of an imminent collision and of the need to take immediate preventative action.



- The Time to Collision (TTC) is calculated and when it drops below two seconds, a Pedestrian Collision Warning (PCW) is generated.

Collision avoidance technology does not alter any physical aspects of the heavy truck nor interfere with standard truck uses. Staff have identified challenges with CAS in an operations environment such as sensors/cameras being dislodged or knocked off, or sensor/camera impediment by dirt or debris, thereby potentially impacting system detection. Each CAS equipped vehicle is an estimated \$11,450 for one-time costs, plus approximately \$800 per year for annual operating costs.

Staff regularly monitor emerging opportunities as vehicle technology evolves for appropriate application to the City's fleet.

### *Summary*

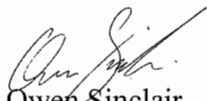
The current approach of conducting robust driver safety training and assessment programs for City staff, combined with monitoring of hired heavy truck contractors, has proven an effective approach to maximizing safety for VRUs, with no related accidents involving VRUs and heavy trucks in the City's historical records. This, coupled with the lack of conclusive studies that side guards offer any additional protection and can present other operational challenges, and the high costs associated with CAS at this time, would indicate the current training and assessment model offers considerable safety for VRUs. Staff will continue to evaluate cost effective vehicle technology-based safety systems as part of continuous improvement for safety-related initiatives.

### **Financial Impact**

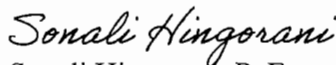
None.

### **Conclusion**

The City is proactive in implementing projects that revise road geometry to increase safety, particularly for VRUs. There is no mandate at the Provincial or Federal level for the provision of side guards as part of commercial vehicle specifications given the lack of conclusive evidence in the effectiveness in mitigating conflicts between VRUs and heavy trucks. The City's current investment in infrastructure upgrades and commercial vehicle operator training has proven successful as staff are not aware of any incidents between heavy trucks, or City owned and contracted heavy trucks, and vulnerable road users.



Owen Sinclair  
Manager, Fleet Operations  
(604-233-3301)



Sonali Hingorani, P. Eng.  
Manager, Transportation Planning and New Mobility  
(604-276-4049)



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee **Date:** September 22, 2023  
**From:** Milton Chan, P.Eng.  
Director, Engineering **File:** 10-6060-01/2023-Vol  
01  
**Re:** Iona Island Wastewater Treatment Plant – Update September 2023

### Staff Recommendation

That the proposed comments for the use of barges as the primary mode of transportation for construction materials and equipment for the Iona Island Wastewater Treatment Plant Upgrade project, as outlined in the staff report titled “Iona Island Wastewater Treatment Plant – Update September 2023,” dated September 22, 2023 from the Director, Engineering be endorsed for submission to Metro Vancouver.

Milton Chan, P.Eng.  
Director, Engineering  
(604)-276-4377

Att. 2

| REPORT CONCURRENCE                 |                                     |                                       |
|------------------------------------|-------------------------------------|---------------------------------------|
| <b>ROUTED TO:</b>                  | <b>CONCURRENCE</b>                  | <b>CONCURRENCE OF GENERAL MANAGER</b> |
| Parks Services                     | <input checked="" type="checkbox"/> |                                       |
| Sustainability and District Energy | <input checked="" type="checkbox"/> |                                       |
| <b>SENIOR STAFF REPORT REVIEW</b>  | <b>INITIALS:</b>                    | <b>APPROVED BY CAO</b>                |
|                                    |                                     |                                       |

## Staff Report

### Origin

The Iona Island Wastewater Treatment Plant is owned and operated by Metro Vancouver. It serves approximately 750,000 residents in the Vancouver Sewerage Area, including Vancouver, UBC Endowment Lands, and parts of Burnaby and Richmond. For Richmond, the Iona Plant only provides treatment for sewage originating from Mitchell Island and Richmond Island.

The Iona Island Wastewater Treatment Plant Upgrade involves the construction of a new facility to replace the existing primary treatment plant located on Iona Island. The upgrade is intended to comply with the updated Federal regulations of achieving a minimum of secondary level wastewater treatment by 2030. The new facility will provide a higher level of treatment and will be located in the same location as the existing wastewater treatment plant. The footprint of the new treatment plant will be larger than that of the existing.

At the November 20, 2019 Public Works and Transportation Committee Meeting, Metro Vancouver presented preliminary project design concepts. City comments on these design concepts were endorsed by Council at the January 27, 2020 Regular Council Meeting (Attachment 1) and submitted to Metro Vancouver. The response from Metro Vancouver has been largely positive, and staff will continue to communicate these comments to Metro Vancouver through the remainder of the design and construction process.

This report provides an update on the project, and outlines proposed comments on the potential use of barges during construction.

This report supports Council's Strategic Plan 2022-2026 Focus Area #2 Strategic and Sustainable Community Growth:

*2.3 Ensure that both built and natural infrastructure supports sustainable development throughout the city.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

*3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #5 A Leader in Environmental Sustainability:

*5.1 Continue to demonstrate leadership in proactive climate action and environmental sustainability.*

## **Current Update**

### Project Status

In July 2020, following additional design work and stakeholder engagement, the Greater Vancouver Sewerage and Drainage District (GVS&DD) Board endorsed a design concept that included tertiary treatment, resource recovery opportunities, ecological enhancement opportunities, community and park integration, and interpretive programs.

Subsequently, Metro Vancouver implemented a project definition process for stakeholder and public engagement, and conducted engineering assessments to refine the design concept. Through this process, the conceptual design was further developed and later approved at the GVS&DD Board Meeting on March 25, 2022.

The project is currently in the early works and preliminary design phase, with work to prepare the site underway.

The preliminary project schedule identifies completion of the upgrade to secondary treatment by 2035, five years beyond the regulatory deadline of 2030. The ecological enhancements and remaining construction are expected to be completed by 2038.

### Project Funding

The total estimated cost of the project is \$9.9 billion (including cost escalation), based on the conceptual design that was approved by the GVS&DD Board in March 2022. In March 2023, the provincial government announced a \$250M funding contribution for the project. Metro Vancouver will continue exploring senior government funding opportunities as the project progresses.

### Project Governance

During the GVS&DD Board Meeting on February 3, 2022, the GVS&DD Board discussed the need to develop a more robust project governance to limit the potential for significant cost increases. As such, Metro Vancouver has established dedicated project delivery, procurement and real estate departments to improve the management and delivery of critical projects. Metro Vancouver staff provided an update to the Metro Vancouver Regional District (MVRD) Board on their process improvements in an information report titled “Due Diligence Improvements for Major Projects” at the July 28, 2023 MVRD Board meeting.

The Iona Island Wastewater Treatment Plant Upgrade is proposed to be delivered in accordance with Metro Vancouver’s stage gate framework. The framework defines five stage gates that capture key milestones associated with the project initiation, definition, design, and construction phases. All project tasks within each phase of the project are required to be completed before the next stage gate can begin. Metro Vancouver staff have advised that this project delivery method will clearly define project objectives, roles and responsibilities, and promote risk management and efficient reporting to project stakeholders and decision makers.



### Community Engagement

Metro Vancouver began community engagement for the project in 2018 to receive feedback on the conceptual design and associated ecological projects. The engagement included member jurisdictions, the public, key stakeholders and First Nations. Many of the concerns that were raised during the engagement were addressed through the project conceptual design phase, and Metro Vancouver has indicated that the remaining concerns will be addressed during the ongoing project early works and preliminary design phase.

Project updates and community engagement events are regularly updated on Metro Vancouver's webpage for the project.

### **Temporary Barge Facility**

During the project definition stage, Metro Vancouver identified the potential use of barges to transport materials and equipment during construction of the project. Using barges will reduce construction traffic on Ferguson Road, thereby improving safety for cyclists, pedestrians, and vehicles. In addition, greenhouse gas emissions will be significantly reduced as Metro Vancouver anticipates that the barge facility will replace over 500 dump trucks per day. If barges are not used, City-owned roads would be subject to large volumes of heavy truck traffic, which could significantly accelerate the deterioration of the roadways.

To facilitate this mode of transportation, a temporary barge facility is proposed to be constructed near the northeast portion of the site (Attachment 2). In an information report included on the March 25, 2022 GVS&DD Board Agenda, Metro Vancouver staff indicated that Deering Island residents had expressed concerns about the proposed barge facility location.

On October 5, 2023, Metro Vancouver is hosting an information session that will provide an opportunity for residents in the region to share their feedback on potential impacts of the barge facility. The engagement event will include updates on mitigation measures that Metro Vancouver will undertake for impacted nearby communities.

### **Analysis**

The use of barges is in alignment with the Council endorsed comments on this project relating to road safety and additional loading of roads. Staff propose that the comment below be forwarded to Metro Vancouver:

- That the City supports the use of barges to transport materials and equipment during construction to reduce traffic congestion, enhance safety for cyclists accessing Iona Beach Park, and reduce greenhouse gas emissions.

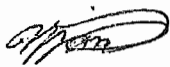
### **Financial Impact**

None at this time.

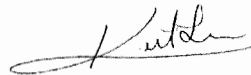
## Conclusion

The Metro Vancouver Iona Island Wastewater Treatment Plant Upgrade Project will replace the existing primary treatment plant located in Richmond with a new facility that provides a higher level of treatment. The project conceptual design has been approved by the GVS&DD Board, and the total estimated cost of the project is \$9.9 billion. The project is currently in the early works and preliminary design phase, and construction is anticipated to be completed by 2038.

The use of barges during construction is consistent with the Council endorsed comments on this project, and staff recommend that the proposed comment be endorsed for submission to Metro Vancouver.



Manraj Gill, EIT  
Senior Project Manager  
(604)-247-4460



Keith Lam, P.Eng., PMP  
Project Manager  
(604)-204-8516

Att.1: Iona WWTP Comments Endorsed January 27, 2020

Att.2: Iona Island Wastewater Treatment Plant Projects Summary



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee      **Date:** December 11, 2019  
**From:** Milton Chan, P.Eng.  
 Acting Director, Engineering      **File:** 10-6060-04-01/2019-Vol 01  
**Re:** Iona Island Wastewater Treatment Plant Upgrade Project

### Staff Recommendation

That the proposed comments on the Metro Vancouver Iona Island Wastewater Treatment Plant Upgrade project, as outlined in the staff report titled "Iona Island Wastewater Treatment Plant Upgrade Project," dated December 11, 2019 from the Acting Director, Engineering be endorsed for submission to Metro Vancouver.

Milton Chan, P.Eng.  
 Acting Director, Engineering  
 (604-276-4377)

Att. 1

| REPORT CONCURRENCE   |                                     |                                       |
|--|-------------------------------------|---------------------------------------|
| <b>ROUTED TO:</b>  | <b>CONCURRENCE</b>                  | <b>CONCURRENCE OF GENERAL MANAGER</b> |
| Development Applications   | <input checked="" type="checkbox"/> |                                       |
| Transportation   | <input checked="" type="checkbox"/> |                                       |
| Sustainability   | <input checked="" type="checkbox"/> |                                       |
| Parks Services   | <input checked="" type="checkbox"/> |                                       |
| <b>REVIEWED BY STAFF REPORT /<br/>AGENDA REVIEW SUBCOMMITTEE</b> | <b>INITIALS:</b><br><br>CS          | <b>APPROVED BY CAO</b><br><br>        |

## **Staff Report**

### **Origin**

At the November 20, 2019 Public Works and Transportation Committee, Metro Vancouver presented an update on the Iona Island Wastewater Treatment Plant (Iona Plant) Upgrade Project.

The treatment plant serves approximately 750,000 residents in the Vancouver Sewerage Area (VSA), which includes Vancouver, UBC Endowment Lands, and parts of Burnaby and Richmond. For Richmond, the Iona Plant only provides treatment for sewage originating from Mitchell Island and Richmond Island.

The Iona Plant Upgrade project involves construction of a new facility to replace the existing primary treatment plant located on Iona Island. This upgrade is required to comply with the updated Federal regulations of achieving a minimum of secondary level wastewater treatment by 2030. The new facility will provide a higher level of treatment and will be located on the site of the existing wastewater treatment plant on Iona Island, but with an expanded footprint.

The project is currently in the Project Definition phase and the Design and Construction phase is expected to begin in 2021. Project completion is anticipated by the end of 2030. Three preliminary concepts were provided to the Committee (Attachment 1). Metro Vancouver is currently presenting the three concepts to regional stakeholders and refining these into a preferred design. The preferred design may incorporate elements from any or all of the preliminary concepts and is scheduled to be presented to the Metro Vancouver Liquid Waste Committee in March, followed by another round of public engagement. Metro Vancouver is planning a public workshop in Richmond in early 2020; however, the date and location have not been finalized.

In December 2018, Council issued an Environmentally Sensitive Area (ESA) Development Permit (DP 18-820582) to Metro Vancouver to allow construction of temporary mechanical dewatering facilities on site in preparation for future upgrades to the treatment facility. A second associated ESA Development Permit (DP 19-850320) for a temporary concrete pad and gravel parking areas to further facilitate the dewatering activities has been endorsed by the Development Permit Panel and is anticipated to be brought forward to Council in early 2020.

In addition, at the November 20, 2019 Public Works and Transportation Committee, the Committee made the referral that “staff work with Metro Vancouver and YVR Airport Authority to improve the safety of the road out to Iona for cyclists and other users.” A joint meeting between the City, Metro Vancouver and Vancouver Airport Authority staff has been scheduled in January 2020 to initiate work on this matter.



This report supports the following strategies within Council's Strategic Plan 2018-2022:  
Strategy #1, A Safe and Resilient City:

*Enhance and protect the safety and well-being of Richmond.*

*1.2 Future-proof and maintain city infrastructure to keep the community safe.*

Strategy #2, A Sustainable and Environmentally Conscious City:

*Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.*

*2.1 Continued leadership in addressing climate change and promoting circular economic principles*

*2.2 Policies and practices support Richmond's sustainability goals.*

This report outlines proposed comments on the general treatment plant upgrade concept for Council consideration.

## **Analysis**

Staff have reviewed the general concept of the project and have proposed comments, as outlined below:

1. That the City supports a tertiary level of treatment for the new wastewater treatment plant;
2. That Metro Vancouver seek opportunities to contribute to the provincial and federal efforts to revitalize Sturgeon Bank through the Steveston and Iona restoration projects that are currently under way;
3. That Metro Vancouver include discussions supporting fish and wildlife habitat enhancement in their stakeholder engagement events and further consider all wildlife receptors specific to the provincially protected Sturgeon Banks Wildlife Management Area;
4. That the effluent standards be reviewed to further reduce any environmental impacts;
5. That potential odour issues related to increased operation and expansion of the Iona Plant be investigated;
6. That public access to Iona Beach Park be maintained and enhanced, and pedestrian trails be implemented to make the beaches to the south and west of the Iona Plant more accessible;


7. That Metro Vancouver implement educational programming and interpretation amenities to promote the ecological values of the marsh and foreshore areas;
8. That Metro Vancouver work with the City and YVR to provide protected cycling facilities along Ferguson Road and Iona Island Causeway to improve safety of the road for cyclists accessing Iona Beach Park;
9. That the impacts of additional loading on the road be evaluated to ensure that ditch bank stability for both sides of the road is not compromised;
10. That Metro Vancouver consider climate change-induced sea level rise and flood risk management in the planning and implementation of this project, and explore options to raise the land elevation and/or implement flood protection infrastructure to ensure operational capability of the treatment plant over its service life;
11. That Metro Vancouver anticipate that future development associated with the Iona Plant project will continue to follow the City's Environmentally Sensitive Area Development Permit Process to secure appropriate compensation;
12. That discussions regarding the facility's waste recovery initiative, which will produce resources of value to the City, such as water for irrigation, be included as a part of the project's stakeholder engagement events; and
13. That Metro Vancouver explore opportunities to maximize energy recovery from the wastewater treatment process.

### **Financial Impact**

None.

### **Conclusion**

The Metro Vancouver Iona Island Wastewater Treatment Plant Upgrade Project will replace the existing primary treatment plant located in Richmond with a new facility that provides a higher level of treatment. The project is currently in the Project Definition phase and the construction is anticipated to be completed by the end of 2030. Staff have reviewed the information presented and have proposed comments regarding the project. The proposed comments aim to enhance the City's environmental quality and public safety, as well as encourage Metro Vancouver to explore waste and energy recovery initiatives. Staff recommend that the proposed comments outlined in this report be endorsed for submission to Metro Vancouver.

  
Jason Ho, P.Eng.  
Manager, Engineering Planning  
(604-244-1281)

JH:rd

Attachment 1: Metro Vancouver Iona Plant Project Definition Update Presentation

## Metro Vancouver Iona Plant Project Definition Update Presentation



**Fred Nenninger**

DIRECTOR, POLICY, PLANNING AND ANALYSIS  
LIQUID WASTE SERVICES

VSA Councils Update

3/25/2014



## PROJECT GOALS

Secondary  
Wastewater  
Treatment

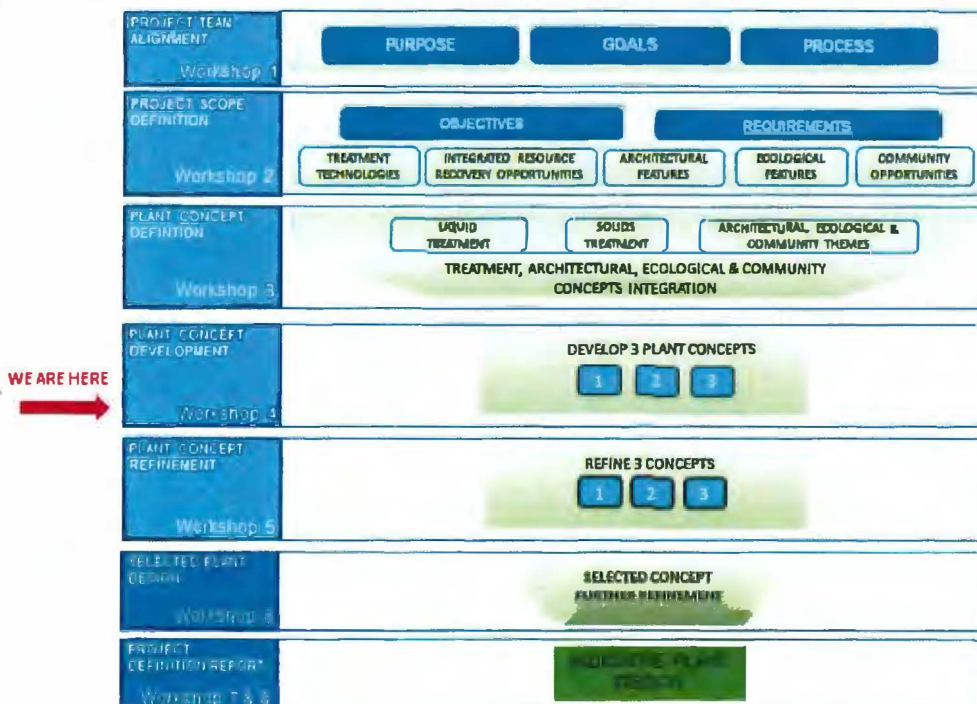
Community and  
Park Integration

Resource Recovery

## PROJECT DEFINITION PHASE














- Plan for plant to 2100
- Compare liquid treatment options
- Compare solids treatment options
- Develop an indicative design for 2030 build
- Integrate new plant with park
- Business case resource recovery opportunities

## PROJECT DEFINITION PROCESS





## WASTEWATER TREATMENT MATRIX

|                             | Plant Build Scenarios   |  |  |
|-----------------------------|---|--|--|
|                             | Secondary Plant   | Tertiary Plant (Filtration)  | Tertiary Plant (MBR)   |
| Primary Treatment Options   | INCLINED PLATE CLARIFIERS<br>                        | BIOLOGICALLY ENHANCED CLARIFICATION<br>   | INCLINED PLATE CLARIFIERS + CHEMICALS<br> |
| Secondary Treatment Options | ACTIVATED SLUDGE<br>                                 | ACTIVATED SLUDGE<br>  | MEMBRANE BIOREACTOR<br>                   |
| Tertiary Treatment Options  |   | TERTIARY FILTRATION<br>   | MEMBRANE BIOREACTOR<br>                   |
| Solids Treatment Options    | AEROBIC DIGESTION<br> → BIOSOLIDS MANAGEMENT PROGRAM | THERMAL HYDROLYSIS + AEROBIC DIGESTION + BIOSOLIDS DRYING<br> →  →  | SLUDGE WASTE-TO-ENERGY<br>                |

## ADVANCED TREATMENT PILOT PLANT

- Example process train for micropollutant removal



## IONA ISLAND



## SECONDARY PLANT



## TERTIARY PLANT (FILTRATION)



## TERTIARY PLANT (MBR)





## RESOURCE RECOVERY OPPORTUNITIES



## ENGAGEMENT ACTIVITIES (2019 / 2020)

| Timeline                         | Activity   |
|----------------------------------|--|
| October 17<br>November 1         | Present preliminary design concepts to Liquid Waste Committee and GVS&DD Board   |
| November 2019 -<br>February 2020 | Present preliminary design concepts to: <ul style="list-style-type: none"> <li>• VSA municipal councils / committees</li> <li>• Musqueam Chief and Council</li> <li>• Regional Parks Committee</li> <li>• Public Workshop #2 (Richmond)</li> <li>• Community associations / environmental groups</li> <li>• Musqueam Community Meeting #2</li> </ul> |
| Ongoing                          | Monthly meetings with VSA municipal staff<br>Meetings with Musqueam staff<br>Stakeholder meetings  |

## ENGAGEMENT ACTIVITIES (2020)

| Timeline           | Activity   |
|--------------------|--|
| March              | <b>Special Meeting of the Liquid Waste Committee to workshop design concepts and recommended design</b><br><b>Present design concepts and recommended design to GVS&amp;DD Board</b>   |
| April to September | <b>Present recommended design to:</b> <ul style="list-style-type: none"><li>• VSA municipal councils / committees</li><li>• Musqueam Chief and Council (TBC)</li><li>• Regional Parks Committee</li><li>• Public Workshop #3</li><li>• Community associations / environmental groups</li><li>• Musqueam Community Meeting #3 (TBC)</li></ul> |
| November           | <b>Project Definition Report and Indicative Design to Liquid Waste Committee and GVS&amp;DD Board</b>  |

QUESTIONS?












# City of Richmond

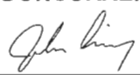

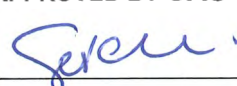
## Report to Committee

**To:** Public Works and Transportation Committee **Date:** September 13, 2023  
**From:** Milton Chan, P.Eng.  
Director, Engineering **File:** 10-6060-01/2023-Vol  
01  
**Re:** **UBCM Community Emergency Preparedness Fund: 2023/24 Disaster Risk  
Reduction – Climate Adaptation Grant Application**

### Staff Recommendations

1. That the application to the Community Emergency Preparedness Fund, Disaster Risk Reduction – Climate Adaptation funding stream as outlined in the staff report titled “UBCM Community Emergency Preparedness Fund: 2023/24 Disaster Risk Reduction – Climate Adaptation Grant Application” dated September 13, 2023 from the Director, Engineering be endorsed;
2. That should the grant application be successful, the Chief Administrative Officer and the General Manager, Engineering and Public Works, be authorized on behalf of the City to negotiate and execute funding agreements with UBCM for the above mentioned projects; and
3. That should the grant application be successful, capital projects of \$150,000 for the Nature-Based Flood Protection Solutions Assessment, \$150,000 for Emergency Flood Protection Equipment, and \$2,500,000 for Dike Rehabilitation be approved with funding from the external grant, as outlined in the staff report titled “UBCM Community Emergency Preparedness Fund: 2023/24 Disaster Risk Reduction – Climate Adaptation Grant Application” dated September 13, 2023 from the Director, Engineering, and be included in the Consolidated 5 Year Financial Plan (2024-2028) accordingly.

  
Milton Chan, P.Eng.  
Director, Engineering  
(604)-276-4377

| REPORT CONCURRENCE  |  |  |
|---|--|--|
| <b>ROUTED TO:</b><br>Intergovernmental Relations<br>Finance<br>Public Works<br>Sustainability and District Energy | <b>CONCURRENCE</b><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> | <b>CONCURRENCE OF GENERAL MANAGER</b><br> |
| <b>SENIOR STAFF REPORT REVIEW</b>   | <b>INITIALS:</b><br>  | <b>APPROVED BY CAO</b><br>                |

## Staff Report

### Origin

The Community Emergency Preparedness Fund (CEPF) is a collection of provincially funded programs that are intended to enhance the resilience of communities in responding to emergencies. The Union of BC Municipalities (UBCM) is currently accepting grant applications under the Disaster Risk Reduction – Climate Adaptation funding stream of the CEPF for projects that are aimed at reducing risks from future disasters due to natural hazards and climate change-induced risks. This report responds to the grant opportunity.

The grant application requires a Council resolution that indicates support for the proposed projects and a willingness to provide overall grant management. The purpose of this report is to seek Council approval to submit a grant application to the 2023/24 UBCM Disaster Risk Reduction – Climate Adaptation funding stream.

The deadline for submission of the grant application is October 6, 2023. As such, staff have prepared and submitted an application for the projects described in this report. Should Council choose not to endorse this submission, staff will contact UBCM to withdraw the application.

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

*Community safety and preparedness through effective planning, strategic partnerships and proactive programs.*

*3.1 Advance proactive, sustainable, and accelerated flood protection in collaboration with other governments and agencies.*

*3.3 Ensure the community is collectively prepared for emergencies and potential disasters.*

*3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #4 Responsible Financial Management and Governance:

*Responsible financial management and efficient use of public resources to meet the needs of the community.*

*4.1 Ensure effective financial planning to support a sustainable future for the City.*

*4.4 Work with all levels of governments for grant and funding opportunities.*



## Analysis

Richmond continues to invest in its extensive network of flood protection infrastructure, which is integral to protecting the health, safety, and economic viability of the City. Predicted climate change impacts on weather patterns and sea level rise reinforce the need for continual upgrades to the City's flood protection infrastructure to address changing needs. The City's Flood Protection Management Strategy and Dike Master Plans are the guiding framework for the advancement of flood protection upgrades. The Flood Protection Management Strategy identifies senior government partnerships as a top priority.

### Community Emergency Preparedness Fund

Funding for the CEPF is provided by the Province of BC and is administered by UBCM. The Disaster Risk Reduction – Climate Adaptation funding stream is a part of the CEPF and is intended to support communities in reducing the risk of future disasters due to natural hazards and climate-related risks. This funding stream is comprised of three separate project categories that will be evaluated and awarded individually. Staff have identified projects that would be appropriate for each category, as summarized in Table 1. The fund can contribute 100% of the cost of eligible activities up to a maximum amount. Projects are required to be completed within two years of notification of funding approval.

Table 1 – Proposed Projects for Disaster Risk Reduction – Climate Adaptation Fund Application

| <b>Funding Category</b>  | <b>Grant Funding Requested</b> | <b>Proposed Project</b>                            |
|--|--------------------------------|--|
| Category 1: Foundational activities (risk mapping, risk assessments, planning) | \$150,000                      | Nature-Based Flood Protection Solutions Assessment |
| Category 2: Non-structural activities  | \$150,000                      | Emergency Flood Protection Equipment               |
| Category 3: Small-scale structural activities                                  | \$2,500,000                    | Dike Rehabilitation                                |

The Nature-Based Flood Protection Solutions Assessment includes evaluating the feasibility of integrating natural infrastructure for future dike construction and shoreline protection to enhance the environment and promote habitat cultivation. The project scope of work will be primarily focused on assessing sections of the coastal dike along Sturgeon Bank. Potential green infrastructure solutions will also be reviewed for river-front sections of dike, although the opportunities are limited by the need to protect the dike against erosion and damage from large debris that flows through the City during spring freshet. Completion of this project will support long-term climate adaptation planning and recommendations for future flood protection work.

The Emergency Flood Protection Equipment project involves the purchase of temporary flood protection equipment which will be deployed to protect vulnerable areas from potential short-term inundation during high water events, such as freshet, king tides and storm surges. This will improve the City's ability to respond to future high-water events, thereby increasing the City's flood resilience.

The Dike Rehabilitation project includes, but is not limited to, up to approximately 1.5 km of structural re-armouring and replacement of failed riprap along sections of dike in the Terra Nova area and along the 21000 Block of River Road. Completion of this project will reduce flood risks due to climate change-induced sea level rise, which is identified as a top priority in the City of Richmond's Flood Protection Management Strategy.

### Financial Impact

Should the City be awarded the grant, staff recommend that the capital projects as outlined in Table 2, be approved and that they be included in the Consolidated 5 Year Financial Plan (2024-2028) accordingly. There is no operating budget impact related to the capital projects.

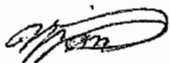
Table 2 – Proposed Capital Projects should the City's Grant Application be Successful

| Project  | Budget      |
|--|-------------|
| Nature-Based Flood Protection Solutions Assessment | \$150,000   |
| Emergency Flood Protection Equipment               | \$150,000   |
| Dike Rehabilitation                                | \$2,500,000 |

If the City's grant application is unsuccessful, staff will submit the capital projects for Council's consideration through future budget processes.

### Conclusion

Grant funding opportunities are available through the CEPF to support municipalities and communities in reducing the risk of future disasters due to natural hazards and climate-related risks. Staff recommend that applications be submitted for the Nature-Based Flood Protection Solutions Assessment, Emergency Flood Protection Equipment, and Dike Rehabilitation Project. These projects align with the grant program guidelines and support the City's Flood Protection Management Strategy.



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Att. 1: Category 3: Project Locations Map

