

**REGIONAL DISTRICT OF NANAIMO  
SOLID WASTE MANAGEMENT SELECT COMMITTEE  
AGENDA**

Thursday, January 10, 2019

1:00 P.M.

Board Chambers

Pages

1. CALL TO ORDER
2. APPROVAL OF THE AGENDA
3. ADOPTION OF MINUTES
  - 3.1 Solid Waste Management Select Committee Meeting - October 4, 2018 3

That the minutes of the Solid Waste Management Select Committee meeting held October 4, 2018, be adopted.
4. INVITED PRESENTATIONS
  - 4.1 Background on Solid Waste Services Function  
*Staff will give presentation.*
5. DELEGATIONS
6. CORRESPONDENCE
7. UNFINISHED BUSINESS
8. REPORTS
  - 8.1 Federation of Canadian Municipalities Vietnam Municipal Solid Waste Management Project 5

That the Board approve Solid Waste Services Manager, Larry Gardner, to participate as an expert volunteer on the Federation of Canadian Municipalities Vietnam Municipal Solid Waste Management Project, Step 1.
  - 8.2 2018 Regional District of Nanaimo Curbside Outreach Program Summary 8

That the Solid Waste Management Select Committee receives this report dated January 10, 2019, for information.
9. BUSINESS ARISING FROM DELEGATIONS
10. NEW BUSINESS

## 11. ADJOURNMENT

**REGIONAL DISTRICT OF NANAIMO  
MINUTES OF THE SOLID WASTE MANAGEMENT SELECT COMMITTEE MEETING**

**Thursday, October 4, 2018  
1:30 P.M.  
Committee Room**

In Attendance:	Director A. McPherson	Chair
	Director H. Houle	Electoral Area B
	Director M. Young	Electoral Area C
	Director J. Stanhope	Electoral Area G
	Director B. McKay	City of Nanaimo
	Director J. Hong	City of Nanaimo
	Director B. Colclough	District of Lantzville
	Director T. Westbrook	Town of Qualicum Beach
Regrets:	Director J. Kipp	City of Nanaimo
	Director D. Brennan	City of Nanaimo
	Director K. Oates	City of Parksville
Also in Attendance:	Director B. Rogers	Electoral Area E
	Director J. Fell	Electoral Area F
	P. Carlyle	Chief Administrative Officer
	R. Alexander	Gen. Mgr. Regional & Community Utilities
	L. Gardner	Mgr. Solid Waste Services
	S. Schultz	Recording Secretary
	V. Schau	Zero Waste Coordinator

**CALL TO ORDER**

The Chair called the meeting to order and respectfully acknowledged the Coast Salish Nations on whose traditional territory the meeting took place.

**APPROVAL OF THE AGENDA**

It was moved and seconded that the agenda be approved as presented.

CARRIED UNANIMOUSLY

**ADOPTION OF MINUTES**

**Solid Waste Management Select Committee Meeting - September 6, 2018**

It was moved and seconded that the minutes of the Solid Waste Management Select Committee meeting held September 6, 2018 be adopted.

CARRIED UNANIMOUSLY

## **REPORTS**

### **Curbside Collection Recommendation**

It was moved and seconded that staff issue a Request for Proposal to solicit proposals for the delivery of an automated garbage, recycling, organics collection service with yard waste and the option for variable garbage and organic cart sizes, for a ten year contract from April 2020 to April 2030.

CARRIED UNANIMOUSLY

It was moved and seconded that Staff report back to the Board on the results of the Request for Proposal.

CARRIED UNANIMOUSLY

### **Crawler Dozer Purchase**

It was moved and seconded that the Board approve the purchase of a 2018 Case 2050M Crawler Dozer with a Waste Handling Package from The Inland Group for \$434,520 (exclusive of taxes).

CARRIED UNANIMOUSLY

## **IN CAMERA**

It was moved and seconded that pursuant to Section 90 (1)(k) of the Community Charter the Committee proceed to an In Camera meeting for discussion related to negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages.

CARRIED UNANIMOUSLY

## **ADJOURNMENT**

It was moved and seconded that the meeting be adjourned

TIME: 2:50 PM

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CHAIR

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**TO:** Solid Waste Management Select Committee    **MEETING:** January 10, 2019

**FROM:** Larry Gardner  
Manager, Solid Waste Services    **FILE:** 5360-01

**SUBJECT:** Federation of Canadian Municipalities Vietnam Municipal Solid Waste Management Project

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### **RECOMMENDATION**

That the Board approve Solid Waste Services Manager, Larry Gardner, to participate as an expert volunteer on the Federation of Canadian Municipalities Vietnam Municipal Solid Waste Management Project, Step 1.

### **SUMMARY**

The Federation of Canadian Municipalities (FCM) has initiated a 3 year, \$1,000,000 project funded by Environment and Climate Change Canada to assist Vietnamese cities in managing their municipal solid waste. For Step 1 of the project, FCM is seeking individual experts as technical advisors from 2 or more Canadian municipalities or Regional Districts to help participating Vietnamese cities assess their municipal solid waste management practices, identify potential solutions and secure funding.

The Regional District of Nanaimo (RDN) is a world leader in municipal solid waste management and this initiative provides for a rare opportunity to benefit other communities in another country through the sharing of our experiences. Larry Gardner has more than 30 years' experience with solid waste management including the assessment, monitoring, and operation and monitoring of landfills. The combination of Larry Gardner's skills and the RDN's accomplishments make him a well suited candidate for the FCM initiative.

The initial commitment for Step 1 is a two-week mission to Vietnam in March 2019 with a total time commitment of approximately 18 days to cover preparation, travel, the mission and follow-up. FCM covers the travel expenses.

On successful completion of Step 1, FCM has planned for a general recruitment call to all FCM municipalities to become Vietnam Solid Waste Management partners, participating in the full project to its end in March 2021 (Step 2). The RDN's participation in Step 2 of the project would be a future decision of the Board.

### **BACKGROUND**

The *Improved Municipal Solid Waste Practices to Reduce Short-Lived Climate Pollutants in Vietnam Project* is funded by Environment and Climate Change Canada and implemented by

FCM and the Association of Cities in Vietnam. This two and a half year project will support two medium-size cities in Vietnam (Bac Giang in northern, and Hoi An in central Vietnam) to implement innovative pilot initiatives that contribute to the reduction of short-lived climate pollutants by improving practices in municipal solid waste management.

The project is being carried out in 2 steps as follows:

### **Step 1**

This first Step will see the selection of 2 or more volunteer technical advisors likely from 2 or more municipalities or Regional Districts to conduct a two-week mission to Vietnam in March 2019. This amounts to an initial commitment of approximately 18 days (i.e. prep, travel, mission, follow-up).

The focus of Step 1 is to consider:

- technologies for the capture of methane and to rehabilitate existing landfills;
- initiatives to increase and/or improve the treatment of organic waste, including separation and processing into viable compost materials; and
- increased capacity within participating cities for municipal solid waste planning and management.

### **Step 2**

In March 2019, FCM will open up a general call for expressions of interest for long-term (2 years) participation in the Vietnam Solid Waste Management project to all member municipalities. Applicants will be expected to commit to participation in four missions to Vietnam and hosting one Vietnamese study delegation over the life of the project.

The focus of Step 2 is to:

- participate with a team of solid waste practitioners from FCM member municipalities, technical experts/consultant, local Vietnamese experts and City staff to plan and deliver projects to help Vietnamese cities develop capacity, undertake activities and achieve solid waste management objectives.
- provide technical assistance (assisting and coaching) to Vietnamese counterparts to carry out their planned tasks related to landfill rehabilitation and gas control, organic waste separation and composting and/or solid waste management strategic planning;
- assess progress from previous missions and define activities to be carried out prior to the next mission;
- plan and conduct short workshops or seminars on topics of relevance to the cities if requested and included in the work plan;
- conduct a study program for a delegation of officials from Vietnam and,
- final mission (Feb/March 2021) – participate in the final knowledge sharing event and assist with project evaluation;

## **ALTERNATIVES**

1. Approve Solid Waste Services Manager, Larry Gardner, to participate as an expert volunteer on the FCM Vietnam Municipal Solid Waste Management Project, Step 1
2. Do not approve of participation in the Vietnam Municipal Solid Waste Management Project.

## **FINANCIAL IMPLICATIONS**

All travel expenses are covered by FCM for the duration of the mission. Time is donated by the individual volunteer expert and the respective organization and is estimated at approximately 18 days with an estimated cost implication of the RDN of about \$8000 should the application be successful.

## **STRATEGIC PLAN IMPLICATIONS**

Focus On The Environment- We Will Have A Strong Focus On Protecting And Enhancing Our Environment In All Decisions



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Larry Gardner  
lgardner@rdn.bc.ca  
January 1, 2019

Reviewed by:

- R. Alexander, General Manager, Regional and Community Utilities
- P. Carlyle, Chief Administrative Officer

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**TO:** Solid Waste Management Select Committee    **MEETING:** January 10, 2019

**FROM:** Kirsten Gellein, Special Projects Assistant    **FILE:** 5310-01

**SUBJECT:** 2018 Regional District of Nanaimo Curbside Outreach Program Summary

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### **RECOMMENDATION**

That the Solid Waste Management Select Committee receives this report dated January 10, 2019, for information.

### **SUMMARY**

The Regional District of Nanaimo (RDN) undertakes the Curbside Recycling Outreach Program (Recycling Outreach) as a contractual obligation under our agreement with Recycling BC for curbside collection of packaging and printed paper materials, and is funded through the education and administration portion of monies received from Recycle BC. The 2018 Recycling Outreach program assesses compliance with Recycling BC requirements, and reinforces good recycling practices.

In 2018, the Curbside Outreach Program was extended for two collection weeks to include a garbage component (Garbage Outreach), with the intention of gathering data on households setting out excessive volumes of garbage, use of non-rigid containers, and identification of secondary suites. This information will be used as part of the curbside collection evaluation as these issues will need to be addressed in the upcoming Curbside Collection Services procurement process.

### **BACKGROUND**

The 2018 Curbside Outreach Program ran from late April to the beginning of August, and included eight collection weeks of Recycling Outreach, along with two collection weeks of Garbage Outreach. These two components of the Curbside Outreach Program are detailed below.

#### ***Recycling Outreach***

The RDN has been conducting Recycling Outreach annually since 2014, when the RDN partnered with Recycle BC to become a collector of Packaging and Printed Paper (PPP) for single family dwellings. The main objectives of Recycling Outreach are to:



- collect data for household compliance and non-compliance; and
- drive correct recycling behavior by:
  - reinforcing residents' good recycling practices; and,
  - providing clarity on non-compliant materials.

Based on the August 2018 household count, the RDN will receive an education rebate from Recycling BC of approximately \$21000 to fund Recycling Outreach.

The Recycling Outreach team consisted of two staff members for efficiency and safety reasons, and was led by the Solid Waste Special Projects Assistant and assisted by a staff member from the Solid Waste Service casual labour pool. The routes were predetermined to ensure even coverage of the curbside collection routes, to address problematic areas identified by the RDN curbside collection provider (Waste Connections), as well as coverage of areas missed in previous outreach years. For reference, Attachment 1 shows a map of the current curbside collection routes.

Duties of the Outreach team included inspection of recyclables set out at the curb for collection, identifying and tagging non-compliant recyclables, talking with residents, and distributing information regarding curbside collection and disposal alternatives.

At each household, the upper layers of the recycling bins and yellow bags were examined for presence of non-compliant materials. If no non-compliant materials were found, the bin/bag was tagged with a "Thank You for Recycling" sticker; if non-compliant materials were found, they were removed and tagged with a "Left Behind" sticker. Attachment 2 shows the two stickers used for the 2018 outreach season. In rare instances of high levels of non-compliance materials, the whole bin/bag was set away from the roadside and tagged with a "Left Behind" sticker. A description of the material was indicated on the sticker, so residents could utilize the description to enter into the "What Goes Where?" directory, as explained at the bottom of the sticker.

The Curbside Outreach team distributed yellow recycling bags to households that had overflowing bins/bags or were using single-use film plastic bags to contain their recyclables. Education materials were also distributed, usually during interactions with residents, and included the "Recycling in our Region" brochure, the RDN Curbside App cards, and information on the new Recycle BC Other Flexible Plastic Packaging stream.

### *Compliance Data*

A summary of the 2018 Recycling Outreach can be found on Table 1. It includes a comparison of 2018 to the past five years for totals, average compliance and non-compliance ratios. The lowest and highest single-day compliance percentages are also included to illustrate the range of compliance and overall understanding of the recycling program. Attachment 3 shows the complete 2018 Recycle Outreach results.

	2018 Recycling Outreach			5 Year Average
	Lowest Single Day Compliance	Highest Single Day Compliance	2018 Total	
<b>Total # Households Tagged</b>	75	144	4860	4758
<b>% Compliance</b>	33%	76%	58%	58%
<b>% Non-Compliant</b>	67%	24%	42%	42%

*Table 1: Summary Curbside Recycling Outreach Program*

It is important to note that most commonly, households tagged with the “Left Behind” sticker had one to three non-compliant items. Less frequently, but still prevalent, were bins that had a large quantity of the same contaminating material (e.g. all film plastic and overwrap). Occasionally, the Curbside Outreach team found bins that had a high quantity of multiple types of contaminants.

#### *Summary and Explanation of Common Contaminants*

Table 2: Presence of contaminants per outreach day summarizes the common contaminants and their corresponding rates of occurrence, sorted by presence of the material per day of outreach.

Contaminant	Outreach days in which contaminant was present	
	#	%
<b>Depot - Film</b>	39	100%
<b>Depot - Foam</b>	39	100%
<b>Multilaminate film</b>	39	100%
<b>Depot - Glass</b>	37	95%
<b>Unsortable material<sup>1</sup></b>	34	87%
<b>Products - Plastic</b>	32	82%
<b>Products - Metal</b>	31	79%
<b>Household Hazardous Waste</b>	26	67%
<b>Electronics</b>	16	41%
<b>Soiled Paper</b>	16	41%
<b>Products – Mixed Material</b>	14	36%
<b>Other</b>	13	33%
<b>Loose shredded paper</b>	3	8%
<b>Total Days of Outreach</b>	<b>39</b>	

*Table 2: Presence of contaminants per outreach day*

The most common contaminants were film (Recycle BC’s “Plastic Bags and Overwrap” stream), Styrofoam (Recycle BC’s “Foam Packaging” stream), multi-laminate film plastics (mostly falling into Recycle BC’s new stream “Other Flexible Plastic Packaging”), glass (Recycle BC’s “Glass Containers” stream), and un-sortable material.

<sup>1</sup> As defined by Recycle BC, un-sortable material refers to material that may otherwise be accepted and recyclable, but has been placed in collection containers by residents in a manner that does not allow the material to be recycled.

The multi-laminate film category included materials that are accepted in the new Recycle BC stream “Other Flexible Plastic Packaging”, which has been collected by voluntary depots since June 2018. Common examples of multi-laminate include coffee bags, stand up pouches for frozen foods and dried foods, chip bags, candy bar wrappers, as well as non-recyclable paper- and plastic-layered bags, such as dog food bags and tortilla chip bags.

Relatively common contaminants were materials that fall out of scope of the Recycle BC Residential Paper and Packaging program. These included: plastic products, like water bottles, Rubbermaid totes, ice cube trays, paint trays, and hangers; and metal products, like baking sheets, frying pans, and coffee thermoses. Less commonly present were mixed material products, like childrens’ toys, binders, and shower heads.

Although it was less prevalent, the presence of household hazardous waste (HHW) in curbside recycling continues to pose issues for worker and environmental safety. Materials identified as HHW included motor oil containers, antifreeze/coolant containers, containers for other flammable materials, pesticide containers, and aerosol paint cans. Examples of uncommon hazardous, but more dangerous items, include propane tanks, helium tanks, saw blades, kitchen knives, and potentially hazardous medical waste like syringe casing (without needles) and personal hygiene products infected with human waste.

Electronic items included solar lights, electrical cords, batteries and light bulbs, all of which are items accepted for free recycling at a number of depots across the region. Other items of note include: a pair of clogs, a broken ceramic zebra lawn ornament, garden hose, toilet seats, and vehicle parts.

### *Resident Interactions*

The Curbside Outreach team interacted with 223 residents, of which 93% (207) were positive and well received by residents. Many of these residents appreciated being able to see the materials in question, and took the opportunity to ask about other questionable materials, and general curbside collection inquiries. Generally, the interactions that ended positively tended to begin with the residents expressing dissatisfaction with the current curbside collection program not accepting materials like glass, Styrofoam and film plastic, which are accepted at depots only. Once the collection and sorting process was explained, these residents stated they understood the rationale, but still expressed their desire for these items to be included as part of curbside collection.

The Curbside Outreach team was not able to conclude the remaining 7% (16) of interactions positively; the main concern from these residents was general frustration with recycling as a whole, or their desire to have all recyclables collected as part of the curbside collection program (e.g. glass, film plastic and Styrofoam which are currently accepted at depots only). Two of the interactions involved residents that were concerned about their privacy, and out of respect for their concern, they were excused from the audit.

### *Implications*

Recycling Outreach reinforces the Recycle BC audit data of which materials should be of focus in resident education. The results have been shared with Waste Connections, and resulted in a series of collection driver education session(s) to ensure a thorough understanding and consistency of the in-scope materials accepted as part of the Recycle BC curbside program.

Recycling Outreach continues to be an excellent opportunity to interact with residents. With a well established recycling program, many residents' have developed habits which can be challenging to modify. Curbside Outreach allows RDN staff to communicate changes in recycling streams through face-to-face interactions and tagging physical materials. Curbside Outreach serves an important component of resident education and outreach, alongside education activities such as public events, newsletters, school education program, brochures, and social media. The new Solid Waste Management Plan proposes an Expanded Zero Waste Education program, which will make a greater emphasis on adult education. The RDN will continue to strive to improve recycling rates as we work to advance the goals of the Solid Waste Management Plan.

Audit data can be used to assess the RDNs improvement in reducing contamination since the launch of the Recycle BC program in 2014. Attachment 4 provides data sets for: 1) contamination rates from Recycle BC since the program start; 2) comparison of RDN contamination rates to program averages; 3) contamination rates of major cities across the nation; and 4) disposal rates for regional districts across BC. It is important to note, these data sets do not directly correlate with the Curbside Outreach audit data due to a number of factors, such as program differences between regional districts, including if the program is single- or multi-stream, participation rates, and how the contamination is measured (e.g. by weight, volume, household, or number of items). Nevertheless, the data does show that the RDN has extremely low contamination rates on a comparative basis nationally.

### ***Garbage Outreach***

In 2018, the Curbside Outreach Program was extended for two collection weeks to include a Garbage Outreach component, with the intention of gathering data on households setting out excessive volumes of garbage, use of non-rigid containers, and identification of secondary suites. This information will be used as part of the curbside collection evaluation as these issues will need to be addressed in the upcoming procurement process.

The curbside team inspected households with over the one bin of garbage limit. These households would be recorded as being compliant or non-compliant. Compliant households had either an extra garbage tag attached to their bins, or were on the secondary suites list. Households were considered non-compliant if they had set out garbage well over 100 litres in volume and did not use an extra garbage tag or were not on the secondary suites list. The non-compliant bins were affixed with an extra garbage tag and a letter explaining the allowable garbage weights and volumes, and the extra garbage tag system. The addresses of the non-compliant households were recorded.

The results of Garbage Outreach can be found in Table 3, below.

Date	Route	Total Count	# with Tags	# On 2 <sup>nd</sup> Suite List	# Non-Compliant	% Non-Compliant
April 30	RE	750* <sup>2</sup>	NR <sup>3</sup>	NR	21	2.8%
May 1	RA	1650*	NR	1	28	1.7%
May 16	RB	344	6	1	16	4.7%
May 17	RC	756	9	3	24	3.2%
May 18	RD	187	9	3	25	13.4%
June 12	RE	344	7	4	24	7.0%
June 13	RA	205	6	1	15	7.3%
June 29	RC	469	9	1	29	6.2%
July 3	RD	306	16	4	30	9.8%
July 27	RB	336	8	1	13	3.9%
<b>Total /Average</b>	<b>10</b>	<b>5347</b>	<b>70</b>	<b>19</b>	<b>225</b>	<b>6.0%</b>

Table 3: Garbage Outreach Results

## ALTERNATIVES

This report is provided for information purposes only.

## FINANCIAL IMPLICATIONS

In 2019, the RDN will receive approximately \$1,130,000 from Recycle BC to collect residential recycling on their behalf. Of the Recycle BC funding, approximately \$51,000 is provided to cover increased administration of the program and \$21,000 for education.

## STRATEGIC PLAN IMPLICATIONS

Recycling Outreach is funded through the education and administration portion of monies received by Recycle BC. Consistent with the *“focus on organizational excellence and services”* as set out in the Strategic Plan, Recycling Outreach has been effective in minimizing contamination in the recycling stream as part of our contractual obligation with Recycle BC. Additionally, the education efforts are anticipated to increase diversion of solid waste and recycling to align with the diversion goals as defined in the newly approved Solid Waste Management Plan.

<sup>2</sup> \* – The total counts for these days were estimated by conducting a rough parcel count in the RDN GIS system.

<sup>3</sup> NR – Not recorded.



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Kirsten Gellein  
kgellein@rdn.bc.ca  
December 12, 2018

Reviewed by:

- L. Gardner, Manager, Solid Waste Services
- R. Alexander, General Manager, Regional and Community Utilities
- P. Carlyle, Chief Administrative Officer

Attachments

1. Map of Current Curbside Collection Routes
2. "Left Behind" and "Thank You for Recycling" Stickers
3. 2018 Curbside Recycling Outreach Results
4. Comparison of Contamination Rates

ATTACHMENT 1. MAP OF CURRENT CURBSIDE COLLECTION ROUTES



## ATTACHMENT 2. "LEFT BEHIND" AND "THANK YOU FOR RECYCLING" STICKERS

"Thank you for Recycling" tags, left on compliant bins

# Thank you for Recycling!

## We appreciate it!

Recycling helps keep waste out of the landfill.  
Every year, households in the RDN recycle over 6,000 tonnes.

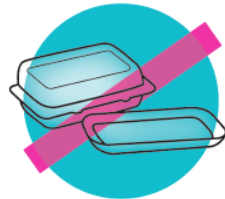
**Recycling Tip:** Keep the following items out of your curbside recycling bin. These items cause issues at our recycling sorting facility and reduce the amount of material that can be recycled.



GLASS



SOFT PLASTICS



STYROFOAM™

To learn where you can return these items and much more:

- Download the RDN Curbside App for android or Apple™ devices
- Visit [www.rdn.bc.ca](http://www.rdn.bc.ca)
- or Contact 1-866-999-8227



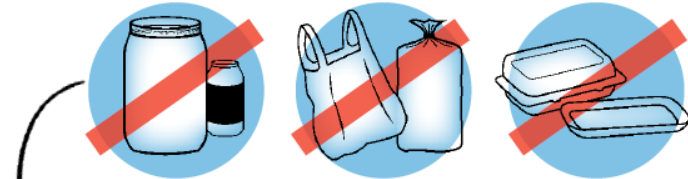
(011-148)

"Left Behind" tag, left on non-compliant bins or materials

# LEFT BEHIND



Some of your material was not collected today because



GLASS

\*SOFT PLASTICS

STYROFOAM™

- ☒ Take to a depot!
- ☐ Container is over 50lbs or 22kg in weight
- ☐ Flatten and cut cardboard to no larger than 30" x 30"
- ☐ Contains garbage, food waste, hazardous material
- ☐ Other \_\_\_\_\_

To learn where you can return these items and much more:

- Download the RDN Curbside App for android or Apple™ devices
- What Goes Where? directory at [rdn.bc.ca/curbside](http://rdn.bc.ca/curbside)
- or Contact 1-866-999-8227

(011-149)



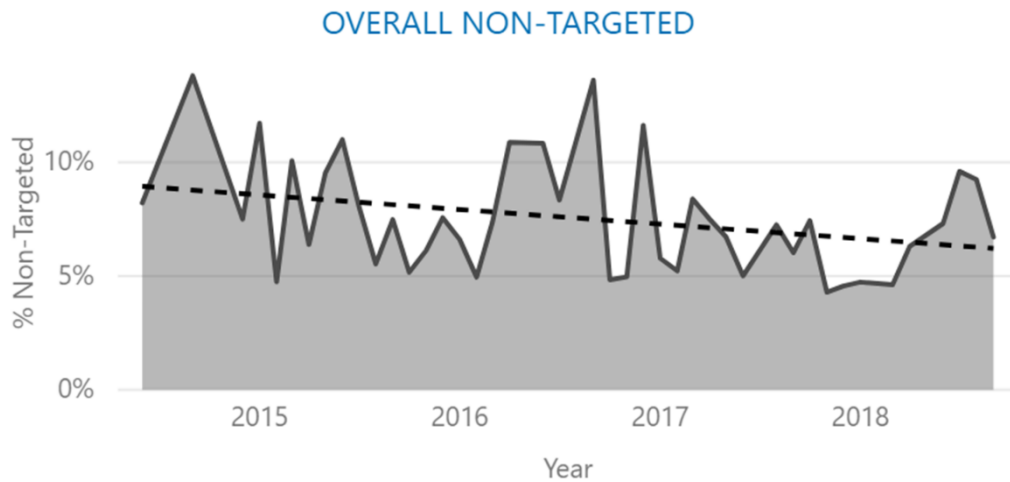
ATTACHMENT 3. TABLE OF 2018 CURBSIDE RECYCLING OUTREACH RESULTS

			Compliance					Resident Interactions			
Date	Route #	Description of Area	# Households Tagged	# Compliant	# Non Compliant	% Compliance	% Non Compliant	# Total	# Positive	# Negative	% Positive
April 23	RE1	San Paniel, east Parksville	187	110	77	58.8%	41.2%	14	12	2	85.7%
April 24	RA1	East Nanoose, Dorcas Point	134	100	34	74.6%	25.4%	8	7	1	87.5%
April 25	RB1	Cassidy, south Cedar	115	64	51	55.7%	44.3%	6	4	2	66.7%
April 26	RC1	French Creek	209	128	81	61.2%	38.8%	11	10	1	90.9%
April 27	RD1	Chartwell	136	92	44	67.6%	32.4%	12	12	0	100.0%
May 7	RE2	East Parksville	74	44	30	59.5%	40.5%	8	8	0	100.0%
May 8	RA2	Northeast Lantzville	130	69	61	53.1%	46.9%	7	7	0	100.0%
May 9	RB2	Central Cedar	75	25	50	33.3%	66.7%	1	1	0	100.0%
May 10	RC2	Northwest Parksville	215	110	105	51.2%	48.8%	10	8	2	80.0%
May 11	RD2	South Errington	79	40	39	50.6%	49.4%	4	3	1	75.0%
May 22	RE3	Horne Lake	81	50	31	61.7%	38.3%	4	4	0	100.0%
May 23	RA3	South Wellington	136	80	56	58.8%	41.2%	2	2	0	100.0%
May 24	RB3	East Cedar	90	51	39	56.7%	43.3%	3	3	0	100.0%
May 25	RC3	Southwest Parksville	268	137	131	51.1%	48.9%	7	5	2	71.4%
May 28	RD1	Central Qualicum Beach	179	115	64	64.2%	35.8%	7	7	0	100.0%
June 5	RE2/3	Englishman River, Nanoose Bay	126	74	52	58.7%	41.3%	3	3	0	100.0%
June 6	RA4	Extension, Nanaimo River	82	40	42	48.8%	51.2%	2	2	0	100.0%
June 7	RB4	Gabriola	77	38	39	49.4%	50.6%	4	4	0	100.0%
June 8	RC4	Coombs, Hilliers	129	55	74	42.6%	57.4%	1	1	0	100.0%
June 11	RD1	East Qualicum Beach	199	124	75	62.3%	37.7%	6	6	0	100.0%
June 19	RE1	West Parksville	152	93	59	61.2%	38.8%	6	5	1	83.3%
June 20	RA1	Central Nanoose Bay	112	54	58	48.2%	51.8%	1	1	0	100.0%
June 21	RB2/3	Central and east Cedar	127	67	60	52.8%	47.2%	5	4	1	80.0%
June 22	RC1	South West Parksville, French Creek	145	87	58	60.0%	40.0%	7	6	1	85.7%
June 25	RD1	West Qualicum Beach	183	110	73	60.1%	39.9%	5	5	0	100.0%
July 5	RA1	Central Nanoose Bay (June 20 follow up)	50	24	26	48.0%	52.0%	7	7	0	100.0%
	RA2	Upper Lantzville	71	46	25	64.8%	35.2%				
July 6	RB2	Central Cedar	109	60	49	55.0%	45.0%	5	5	0	100.0%
July 18	RE3	Dashwood, Qualicum Bay, Deep Bay, Bowser	63	36	27	57.1%	42.9%	9	9	0	100.0%
July 19	RA1	Fairwinds	128	91	37	71.1%	28.9%	3	3	0	100.0%
July 20	RB3	Southeast Cedar, Yellowpoint	89	61	28	68.5%	31.5%	4	4	0	100.0%
July 23	RC3	Southwest Parksville	144	110	34	76.4%	23.6%	8	8	0	100.0%
July 24	RD1	Northeast Qualicum	168	123	45	73.2%	26.8%	12	11	1	91.7%
August 1	RE3	Qualicum Bay	112	72	40	64.3%	35.7%	4	4	0	100.0%
August 2	RA1	South Nanoose Bay	26	9	17	34.6%	65.4%	4	4	0	100.0%
	RA2	Lantzville	103	57	46	55.3%	44.7%	3	3	0	100.0%
August 3	RB2/3	Northeast Cedar	78	46	32	59.0%	41.0%	6	6	0	100.0%
August 7	RC1	French Creek, west Parksville	180	104	76	57.8%	42.2%	9	9	0	100.0%
August 8	RD2	Errington	99	67	32	67.7%	32.3%	5	4	1	80.0%
Total			4860	2863	1997	57.8%	42.2%	223	207	16	94.2%

#### ATTACHMENT 4. COMPARISON OF CONTAMINATION RATES

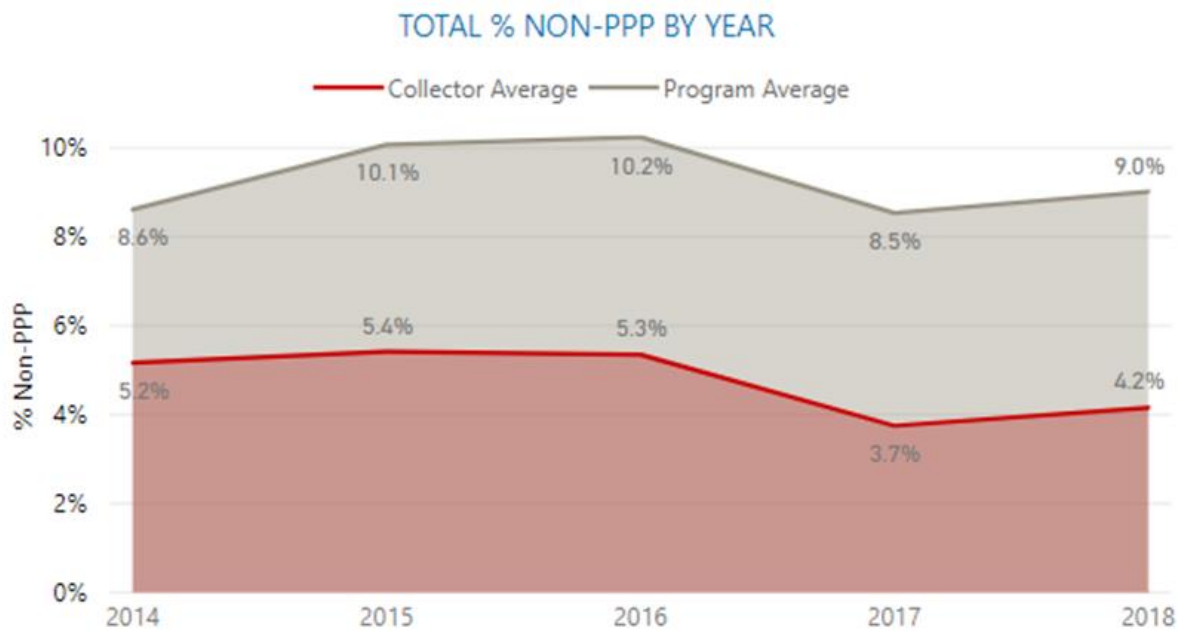
##### *Comparison of Recycle BC Audits for RDN Curbside Materials*

The chart below illustrates the percentage of non-compliance materials in Recycle BC audits since 2014. With wide variation in compliance levels, the overall trend signifies a decrease in contamination.



### Comparison of RDN Contamination to Program Average

Since the launch of the Recycle BC program in 2014, the RDN has consistently proven low contamination rates compared to other jurisdictions. Recycle BC does not release contamination rates for the other jurisdictions, however, the Cowichan Valley Regional District and Regional District of Central Okanagan have released information on their 15 per cent contamination rates from this year. As shown in the chart below, the RDN has maintained contamination rates below fifty per cent of the program average for the past two years.

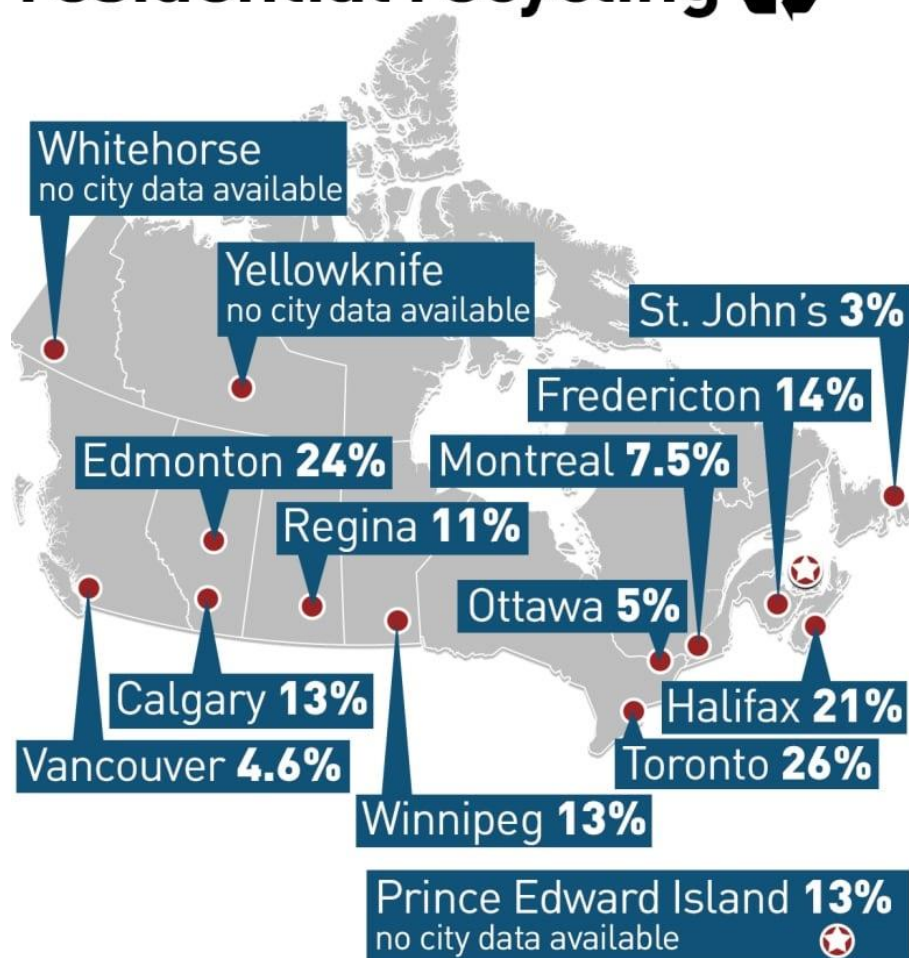


## Contamination Rates for Major Canadian Cities

The infographic below, highlighting contamination rates in major cities across the nation, is from the CBC's April 2018 article entitled, "Many Canadians are recycling wrong, and it's costing us millions"<sup>1</sup>.

Many factors affect the difference in contamination rates, including bin type, whether the program is single- or multi-stream, participation rates, how the contamination is measured (e.g. by weight, volume, household, or number of items), the length of data collection, and time of year. For example, St. John's has a relatively low curbside collection participation rate at 60 per cent, and has not allowed issue materials like plastic bags and styrofoam since their program was launched.

## Contamination rates for residential recycling ♻️



cbcnews.ca

<sup>1</sup> <https://www.cbc.ca/news/technology/recycling-contamination-1.4606893>

### *Per Capital Disposal Rates Across BC*

The graph below, provided by the Province, reports the estimated amount of municipal solid waste disposed per person for each regional district and for British Columbia, in 2016. Per-person disposal rate is an estimate of how many kilograms of solid waste one person sends to a landfill or other disposal site in the given year.

Variability in disposal rates from one region to the next is influenced by factors such as population density, economic activity, tourist and transient population fluctuations, distance to recycling markets, the role of various stewardship agencies operating in an area and the capacity and infrastructure in place in a region. Disposal rate data is useful in setting the stage for continuous improvement in waste management in B.C.

The disposal rates reported here include waste from the residential sector, institutional, commercial, and light industrial sources as well as waste from construction, demolition and renovation activities.

