

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

**TUESDAY, SEPTEMBER 20, 2016, 3:30 PM - 4:30 PM  
RDN Committee Room**

**A G E N D A**

**PAGES**

**CALL TO ORDER**

**DELEGATIONS**

**MINUTES**

2-7 Minutes of the Solid Waste Management Select Committee meeting held May 17, 2016.

**BUSINESS ARISING FROM THE MINUTES**

**COMMUNICATIONS/CORRESPONDENCE**

**UNFINISHED BUSINESS**

**ADVISORY COMMITTEE**

8-9 Minutes of the Regional Solid Waste Advisory Committee meeting held June 23, 2016.

**REPORTS**

10-18 Curbside Outreach Summary Report. (S. Bajwa)

19-31 2016 Green Bin Audit Report. (S. Bajwa)

32-38 Acquire Used Reconditioned Compactor Report. (J. MacIntosh)

**PRESENTATION**

Curbside Outreach Update. (M. Larson)

Residential Green Bin Audit. (M. Larson)

Acquire Used Reconditioned Compactor (L. Gardner)

Status Update SWMP Review Process. (L. Gardner)

**ADDENDUM**

**BUSINESS ARISING FROM DELEGATIONS OR COMMUNICATIONS**

**NEW BUSINESS**

**ADJOURNMENT**

**Distribution:** A. McPherson (Chair), J. Stanhope, H. Houle, J. Kipp, M. Lefebvre, B. McKay, T. Westbrook, J. Hong, M. Young, **RDN Staff:** L. Gardner, M. Larson, R. Alexander, D. Trudeau

## REGIONAL DISTRICT OF NANAIMO

### MINUTES OF THE SOLID WASTE MANAGEMENT SELECT COMMITTEE MEETING HELD ON TUESDAY, MAY 17, 2016 AT 12:00 PM RDN COMMITTEE ROOM

#### Present:

Director A. McPherson	Chairperson
Director H. Houle	Electoral Area 'B'
Director M. Young	Electoral Area 'C'
Director B. McKay	City of Nanaimo
Director J. Kipp	City of Nanaimo
Director M. Lefebvre	City of Parksville
Director B. Luchtmeijer	Town of Qualicum Beach

#### Also in Attendance:

D. Trudeau	CAO, RDN
L. Gardner	Manager of Solid Waste, RDN
S. Horsburgh	Senior Solid Waste Planner, RDN
S. Schultz	Recording Secretary, RDN

#### Regrets:

Director J. Stanhope	Electoral Area 'G'
Director J. Hong	City of Nanaimo
Director T. Westbroek	Town of Qualicum Beach

#### CALL TO ORDER

The meeting was called to order at 12:02 pm by the Chairperson.

#### MINUTES

MOVED Director Houle, SECONDED Director Kipp, that the minutes from the Solid Waste Select Committee meeting held April 12, 2016 be received.

CARRIED

#### BUSINESS ARISING FROM THE MINUTES

#### COMMUNICATIONS/CORRESPONDENCE

#### UNFINISHED BUSINESS

#### ADVISORY COMMITTEE

MOVED Director Houle, SECONDED Director Kipp, that the minutes from the Regional Solid Waste Advisory Committee meeting held April 14, 2016 be received for information only.

CARRIED

#### REPORTS

##### North Berm Construction Project – Tender Award

L. Gardner circulated a revised report to the committee siting a change in calculations in table 2 regarding the "Construction Contract Administrative Services". An update was presented on the results of the berm tender that is designed to provide stability in an earthquake event. The berm also provides an additional 10 years of landfill capacity.

J. Kipp commented that he had an issue with the gravel in regards to stability and would prefer the utilization of rock to address seismic risk, sluffing and hydrogeology.

M. Lefebvre questioned if some bids were higher because they did look forward to problem events?

L. Gardner commented that pricing was based on costs per unit and that all the contractor bids were based on the same criteria. The contingency is for the RDN to provide assurance in the event of any unforeseen costs associated with a large earth works project. The recommended contingency is the same regardless of the contractor.

M. Young questioned if there is a perimeter surrounding the gravel in case of slippage?

M. Lefebvre questioned if there would be slippage with the use of gravel in a seismic event?

L. Gardner responded that the berm is engineered to address the slippage due to an earthquake event regardless of construction using rock or gravel.

M. Young asked, in regards to the asbestos would gravel allow it to permeate to the earth?

L. Gardner responded that there will be a new liner installed that prevents migration of substances from the site. All waste is placed within the liner system.

A. McPherson and J. Kipp commented that they would like to see the design of the berm and a more per unit breakdown in costs between the usage of rock and gravel before this comes to the board.

J. Kipp questioned if the longevity of the landfill is based on a 10 year old tonnage statistic per year or an increased current tonnage calculation?

L. Gardner commented that the landfill life is based on current landfill rates and is 25 years.

D. Trudeau commented that the whole premise behind this project is that it was included in SWMP years ago and this capital project is in the current financial plan. Communities without a landfill have very high export costs and it is very difficult to find landfill space. The RDN's landfill capacity is a huge cost benefit to us.

L. Gardner commented that the new berm's construction is primarily to provide stability. We would need to build the berm regardless of increased capacity.

D. Trudeau mentioned that this project has significant financial impact to the financial plan and the RDN will realize benefits into the future.

MOVED Director Houle, SECONDED Director Lefebvre, that the Solid Waste Management Select Committee recommend that the Regional Board approve the budget for the North Berm project as set out in Table 2 and to direct staff to proceed with tender award to Wacor Holdings Ltd. for the project construction utilizing the gravel option.

CARRIED

## **Comox Valley Regional District (CVRD) Request for Asbestos Disposal**

L. Gardner presented a report regarding the request from the CVRD, on behalf of the CSWM services, that the RDN consider establishing an agreement whereby asbestos and asbestos-containing materials from the CSWM service area be accepted for disposal at the RDN's Regional landfill through to December 31, 2017 with provision to extend the agreement for one year.

The RDN has the capability to manage asbestos waste from CSWM, however, it would be prudent to wait until the North Berm and new cell is constructed at the RDN landfill which is expected to be completed in the Fall of 2016. Accepting the additional out-of-district waste prior to the new cell will exacerbate the existing operational challenges working in a constrained area. Currently CSWM asbestos is being hauled to the Hartland Landfill in Victoria. With our rate increase we are now recovering our cost to manage out of district asbestos.

J. Kipp questioned how the product would be arriving at the facility and what is the product? As there is no treatment for asbestosis and is it in the best interest of the RDN to accept this toxic waste from the CVRD? By the RDN accepting this material the CVRD no longer have to address their own hazardous waste?

L. Gardner commented that there has been a 40% increase in asbestos last year and the greatest majority is drywall.

M. Young questioned if we are handling the asbestos dry or wet and will we be contaminating the site?

L. Gardner responded that the landfill is an engineered system with an impermeable liner designed to accept these types of materials in a safe manner. We do use water at times depending on packaging, weather and disposal area.

A. McPherson questioned if we perhaps take off the 1 year renewal aspect on the report it would make it more palatable of a motion to pass?

A. McPherson questioned is there a map of placement for asbestos in the landfill?

L. Gardner commented that it is almost impossible to map all asbestos as some enters the landfill with other waste.

H. Houle questioned why accept it when someone else is already taking it in? Why not let it continue to go to the Hartland Landfill?

B. McKay mentioned that the AVICC voted in favor of an Island wide conversation on waste and that we would be just helping a neighbor as we have availability and capacity.

B. McKay questioned that he did not see any tonnage specified in the agreement and thinks it would be wise to specify a maximum tonnage for the board.

J. Kipp questioned if the RDN can put our own standards in place if we do decide to accept it, such as; delivery times, days, and quantities. We should be encouraging the CVRD to have some accountability for storing and transporting this material.

L. Gardner mentioned we do have procedures in place at the landfill and manifests are required for transportation. We have set delivery times when trained staff and equipment are onsite.

M. Lefebvre questioned if there are safety controls in place for employees?

L. Gardner responded that there is asbestos and decontamination training given to employees as well as safety equipment such as respirators. Our asbestos control plan is very focused and detailed.

D. Trudeau mentioned we have safety protocols in place and we can take in this hard to manage material and this is an opportunity to create a cooperative relationship with our neighbour and this will help for future collaboration.

M. Lefebvre commented to add to the report that the RDN has controls in place, and how employees are protected from toxic waste and that they are fully aware of the risks before it goes to the board.

M. Young questioned the addition of mapping of asbestos or to set up a specific asbestos disposal area?

L. Gardner responded that we could look into these suggestions however costs would go up significantly.

M. Young would like to add to the report that employees only handle asbestos wet and not dry as it is safer.

B. McKay mentioned that specific disposal sites for asbestos are unrealistic as people will bury it in the garbage instead and contractors will charge more for construction for asbestos removal so homeowners will take it upon themselves and throw in the garbage. The landfill is littered with toxic materials we can't control.

L. Gardner commented that the CVRD is not handling the asbestos directly just finding a resource for their businesses and community.

B. Luchtmeijer commented on what the longer term impacts would be if we do not help in regards to illegal dumping and disposal of this hazardous waste and that we have an obligation to help out neighboring communities.

J. Kipp questioned if we cooperate by taking the asbestos should they cooperate by providing their community promotional materials regarding asbestos. If we are solving their problem they should have investment in this.

MOVED Director Lefebvre, SECONDED Director McKay , that the Solid Waste Management Select Committee recommend that the Regional Board grant the request to accept asbestos and asbestos-containing materials from the Comox Strathcona Waste Management service area starting on completion of the North Berm project and continuing until December 31, 2017 with provision to extend the agreement for one year.

CARRIED

### **Review of Curbside Collection Scheduling**

L. Gardner introduced the report on Curbside Collection scheduling. He explained that add a day scheduling is more cost efficient as there is no need for extra staff and equipment and no overtime for staff. Overall, it would be more expensive to go to a fixed day schedule at approximately a \$90,000/year impact. There is no safety impact foreseen for either schedule.

MOVED Director McKay , SECONDED Director Lefebvre, that the report on the Review of Curbside

Collection Scheduling be received for information.

CARRIED

## PRESENTATION

### Status of 2016 Capital Projects. (Buildings, North Berm, Scale House)

L. Gardner presented on the current capital projects at the landfill, which include the construction of the north berm, the operations building and garage. The North berm needs to be built this summer to secure future landfill capacity and stability to accommodate the waste we manage. The new building has been built using local labor and supplies. The building will be transportable and gives the option to move or re-purpose the building in the future. The garage building is currently on schedule and is a permanent structure as equipment and resources will be needed for the care and maintenance beyond the life of the landfill.

The scale needs to be replaced as it has outlived its functionality and is under weighing but not significantly.

B. McKay commented that the public sector buildings are becoming too lavish and seems unnecessary for the functions they provide.

L. Gardner commented that the current buildings are very worn out and ergonomically not functional for the staff that work in them on a day to day basis. However it will be looked into regarding cost differentials between re-building and re-furbishing.

### Status Update on SWMP Review Process

L. Gardner provided an update on the SWMP Review Process. Options that are being evaluated in Stage 2 include:

- Non-deposit glass at curbside
- Yard and Garden Waste at Curbside
- Compliance and Enforcement at Curbside
- Share Sheds at Regional Facilities
- EPR Stewardship Depots at Regional Facilities
- Zero Waste Policy
- ICI and Multi-Family Diversion
- Residual Management Options
- Demolition and Land Clearing Debris
- Education
- Special Drop off days

Regardless of the technologies used to deal with waste there will always be a requirement to landfill residuals and hazardous materials in the future. Further discussion in regards to additional authorities/enforcement and regulatory tools will also be reviewed. There is also an emphasis to adopt the Zero Waste International Alliance (ZWIA) Zero Waste Definition.

L. Gardner commented that the current plan says to export waste in the future when landfill capacity is reached. We need to review if this is still valid and review the costs associated with each choice.

B. McKay questioned the use of the incinerator technology is that getting better as time goes on.

L. Gardner commented that this is a thermal process with a residual at the end that will still need to be landfilled and that all new technologies, though they can be very efficient, are expensive. Managing waste thermally is environmentally controlled but at a high cost.

B. Luchtmeijer commented that the thermal energy approach requires a certain amount of waste and the RDN does not have the capacity to warrant the process and it would require Island wide participation to obtain the volume required.

L. Gardner commented that there will be a June RSWAC workshop relating to level of service options to establish a plan and diversion targets. A concept of interest for the Select committee to think about is that the value of recyclables is dropping creating increased cost to get higher levels of diversion.

M. Lefebvre questioned why we are not more focused on Producers of the packaging?

L. Gardner commented that the provincial focus of EPR programs is packaging and not the product itself which causes some issues with the products themselves not being recyclable. One option being considered is providing economic incentives for private business to play more of a role in driving diversion rates. The biggest barrier for diversion is convenience and the private sector would possibly provide more services and locations.

J. Kipp commented if education should be our responsibility regarding solid waste?

A. McPherson commented that education is needed for diversion but at whose expense. There should be more enforcement and fines regarding waste diversion.

#### **NEW BUSINESS**

#### **ADJOURNMENT**

Moved Director McKay, SECONDED Director Lefebvre, that the meeting be adjourned.

#### **NEXT MEETING**

Next SWMSC meeting To be Determined.

---

CHAIRPERSON

**REGIONAL DISTRICT OF NANAIMO  
REGIONAL SOLID WASTE ADVISORY COMMITTEE MEETING  
HELD ON THURSDAY, JUNE 23, 2016  
BOARD CHAMBERS**

**Present:**

Alec McPherson	Chair, RDN Director
Bill McKay	Deputy Chair, RDN Director
Jan Hastings	Non Profit Representative
Wally Wells	Business Representative
Stewart Young Jr.	Business Representative
Derek Haarsma	Business Representative
Amanda Ticknor	Business Representative
Dean Jones	Waste Management Industry
Craig Evans	Member at Large
Ben Geselbracht	Member at Large
Gerald Johnson	Member at Large
Jim McTaggart-Cowan	Member at Large
Ellen Ross	Member at Large
John Finnie	Member at Large
Michele Green	Member at Large

**Also in Attendance:**

Director Young	Electoral Area 'C'
Randy Alexander	General Manager, RCU, RDN
Larry Gardner	Manager of Solid Waste, RDN
Sharon Horsburgh	Senior Solid Waste Planner, RDN
Meghan Larson	Special Projects Coordinator, RDN
Sonam Bajwa	Special Projects Assistant, RDN
Rebecca Graves	Recording Secretary, RDN

**Regrets:**

Charlotte Davis	City of Nanaimo
Chief & Council	Nanoose First Nation
Chief & Council	Snuneymuxw First Nation
Michael Recalma	Qualicum First Nation
Glenn Gibson	Island Heath
Al Leuschen	Ministry of Environment
Karen Muttersbach	Environment Canada
Fred Spears	District of Lantzville
Cam Purdon	Town of Qualicum Beach
Michael Tripp	Business Representative

**CALL TO ORDER**

The Chairperson called the meeting to order at 3:18 PM and respectfully acknowledged the Coast Salish First Nations on whose traditional territory the meeting took place.

**DELEGATES**

**MINUTES**

MOVED J. McTaggart-Cowan, SECONDED B. McKay, that the minutes from the meeting of the Regional Solid Waste Advisory Committee regular meeting held May 19, 2016, be adopted. CARRIED



**BUSINESS ARISING FROM THE MINUTES**

**UNFINISHED BUSINESS**

**COMMUNICATIONS/CORRESPONDENCE**

**REPORTS**

**ADDENDUM**

**NEW BUSINESS**

RDN Solid Waste Management Plan Update - Facilitated Workshop. (J. Enes)

Workshop notes forthcoming.

**ADJOURNMENT**

MOVED J. McTaggart-Cowan, SECONDED E. Ross, that this meeting be adjourned.

Time: 7:40 pm.

---

CHAIRPERSON

---

**TO:** Larry Gardner  
Manager, Solid Waste Services

**DATE:** September 6, 2016

**FROM:** Sonam Bajwa  
Special Projects Assistant,  
Solid Waste Services

**MEETING:** SWMSC, September 20, 2016

**FILE:** 5380-20 STEW

**SUBJECT:** Curbside Recycling Collection – Resident Education and Outreach

---

### **RECOMMENDATION**

That the Select Committee receives the report for information.

### **PURPOSE**

To provide a review of recent outreach activities undertaken by Solid Waste Services staff in support of the Regional District of Nanaimo (RDN) curbside collection program, specifically residential curbside recycling.

### **BACKGROUND**

In May 2014, curbside recycling collection in this province changed with the implementation of the province's revised Recycling Regulation to include Packaging and Printed Paper as a product stewardship material. A new stewardship agency, Multi Material BC (MMBC), was created to assist producers in meeting their new obligations.

Changes to the RDN's collection program included new materials being accepted at the curb (such as plant pots, spiral wound containers, non-paint aerosols, tetra packs and more), while textiles could no longer be accepted as they are not a stewardship item and fall outside the scope of the MMBC mandate.

In preparation for the collection program changes, and following on from the May 2014 implementation, RDN staff has been involved with numerous education and outreach efforts. MMBC has shared detailed audit results that RDN staff have used to determine which material is being confused as part of the curbside program and which areas in the RDN have high contamination rates to direct outreach efforts.

### **Websites**

The RDN has continued to utilize and promote the [www.recycling2016.ca](http://www.recycling2016.ca) website in partnership with the City of Nanaimo. The site acts as a hub of information on curbside recycling in the region. This site launched as [www.recycling2014.ca](http://www.recycling2014.ca) and visitation spiked shortly after the May 2014 program implementation. The site was refreshed and updated for 2015 and again in 2016 ([www.recycling2016.ca](http://www.recycling2016.ca)).

Staff are currently working towards updating the main RDN website to make the pages more service focused. Historical information will be relocated making relevant recycling and composting information easier to find. There will also be a transition away from standalone webpages.

### ***Social media***

A bank of social media content with corresponding hashtags has been prepared for RDN solid waste information, to help maintain a consistent presence on Twitter and Facebook. The social media content consists of solid waste topics such as recycling and composting tips, recycling facts and information on how to dispose of confusing items. The curbside collection reminder app and web feature, which is available through the Apple App store and Google Play, is actively promoted to RDN curbside customers. Currently, there are a total of 3,357 people signed up for this app.

### ***Newsletters***

In 2016, two Zero Waste Curbside Program Newsletters will be distributed by Canada Post to 24,000+ homes receiving RDN curbside service. The first newsletter was released at the beginning of April with the second newsletter scheduled for the beginning of November. The spring newsletter celebrated Progressive Waste Services' safety record, reviewed the different Extended Producer Responsibility programs in BC, and identified where different EPR materials are accepted. The November newsletter will highlight the RDN's accomplishments with diversion and lowering contamination, how residents can help ensure continued success and it will feature the new yellow recycling sticker as an alternative to the yellow recycling bag.

### ***Annual collection schedules***

The annual collection schedule for 2016/2017 included information on curbside recycling as well as depot locations. Residents were mailed a two-year collection schedule for 2016/2017. The two year collection schedule helps to reduce the cost of preparing and printing the calendar and reduces the amount of paper mailed to residents.

### ***Event attendance***

RDN Staff have attended a number of local events presenting solid waste information and curbside collection information, to a range of organisations and audiences.

### ***Curbside Setout Inspections***

Utilizing money received from MMBC for administration and education, the aim of the curbside outreach activity was to reach out to residents to clarify common issues and concerns resulting from the MMBC changes to curbside collection, to reinforce residents' good recycling practices, and to provide encouragement where there was room for improvement. A staff member from the Solid Waste Service casual labour pool, who was comfortable interacting with the public and knowledgeable about recycling within the RDN, along with the Special Projects Assistant were employed for the task. Duties 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.

In 2014, the inspections took place over two months (late August to mid-October). In 2015, the inspections ran from early June to mid-August with the staff members in the field on the different recycling collection routes. Success seen in the first 2 years led to the expansion of the program in 2016, which ran from late May to August. In 2016, the field staff (for safety and efficiency it was a pair of staff) started about a third of the way into a route and proceeded along the streets inspecting recycling at the curb and worked until the collection truck caught up with them. If the recycling contained no contamination it was given a sticker thanking the resident for recycling. If contamination was found,

non-compliant items were pulled out and set aside with a different sticker identifying why the recycling would not be collected, with information provided to encourage compliance. Any homes with recycling in plastic bags were given yellow bags to encourage continued participation in the program without the need of residents to purchase additional recycling containers.

Daily inspections ranged from 130 to over 400 homes depending on housing density, interactions with residents, amount of material requiring inspection, and so on. An average of 258 homes were visited per route. Summary data is shown in Table 1. Appendix 1 provides additional information from the 2016 field work.

**Table 1 Summary of Inspection data**

	<b>2014</b>	<b>2015</b>	<b>2016</b>
Total setouts inspected	3,434	4,285	7,726
Compliance	48%	50%	62%
Room for Improvement	52%	50%	38%

Common non-compliance issues encountered by the curbside outreach staff included:

- Plastic bags and/or film plastic
- Styrofoam
- Non-deposit glass containers
- Refundable beverage containers
- Broken hard plastic products
- Recycling in single use plastic bags
- Textiles
- Shredded paper in non-clear plastic bags

In spite of the ongoing education efforts, non-compliant material is being set out for collection; soft plastic and Styrofoam being the predominant materials. Although the “Room for Improvement” number is at 38%, it is important to note that many of these homes had only one or 2 pieces of non-compliant recycling material. Similar to other well-established collection programs, our residents have entrenched behaviours and opinions as to what an acceptable recyclable item is. Changing those long-held opinions and established behaviours to meet the requirements of the Provincial stewardship program will take time and a concerted effort.

The outreach program was very well received by residents who had direct contact with the outreach team. Many residents indicated they were not aware of the changes to the curbside program or were confused as to what materials were accepted under the program giving the outreach team an opportunity to explain the changes to curbside recycling, review confusing items and leave behind informational pamphlets.

The outreach team started to track the number of positive and negative interactions with residents in the second week of outreach. A total of nine negative interactions were received from residents. Most involved annoyance at the fact that plastic bags, Styrofoam and glass had to be taken to a depot. In those situations the staff did what they could to explain the rationale behind having this material taken to a depot and to diffuse the anger. In almost all of these situations, residents understood and agreed with the rationale, however reluctantly. The outreach team had 168 positive interactions that ranged from residents being curious about what we were doing; glad to see people out checking bins or complimenting the program and the amount of material that is accepted curbside. Through these positive interactions, the outreach team discovered that some of the residents did not completely understand the changes to the curbside recycling. Once a resident learned they could recycle plastic bags, they assumed that they could in their blue bin and did not realize that plastic bags had to be taken to a depot.

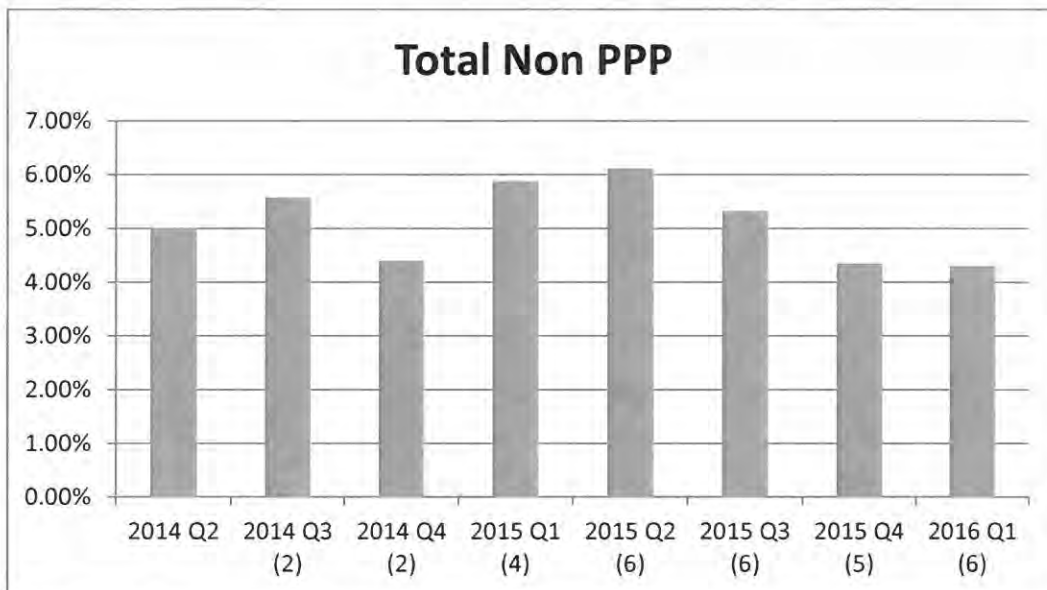
**Collection Staff**

As part of their collection contract, Progressive Waste Solutions staff both on the trucks and those providing customer service play an important education role. The diligence of the collectors on the routes tagging and leaving behind the most obvious non-compliant materials is critical to reinforcing messages regarding acceptable materials (in all three material streams collected, not just recycling).

**Multi Material BC Feedback**

As per the MMBC contract, penalties can be applied if the level of contamination (non-compliant materials) exceeds acceptable levels (3%) on an ongoing basis. The application of penalties is not an arbitrary action, but would only happen after MMBC and the collection provider had worked through a set process over several months to bring the material loads into compliance, and if that process had failed to produce the desired result. Although not at the prescribed acceptable level, the RDN's contamination level has seen a steady decline through public education, newsletters, residential outreach and local partnerships. The RDN maintains one of the lowest contamination levels of Non Printed Paper and Packaging (Non PPP) (4.3%) on Vancouver Island for single stream collection systems and is often asked for advice and strategies by neighboring municipalities.

MMBC has provided detailed audit results which has helped the RDN staff highlight material that residents are confused about and to direct outreach efforts to areas with high contamination rates.



The chart above shows the average contamination, by weight, of audits completed in each quarter and the number of audits completed in that quarter in brackets. Based on 32 audits samples taken from June 2014 to February 2016 the average contamination rate for the RDN is 5.6% with a 4.4% contamination rate in the first quarter of 2016.

The outreach combined with the information received from MMBC regarding the audits has shown that the RDN needs to continue to educate residents and drivers on non-compliant material and ensure that drivers are pulling out this material when they come across it. RDN staff will continue to work with the contractor to ensure that drivers are not picking up recycling in plastic bags. To support drivers, RDN staff will also update non-compliant tags for material left behind to make them easier and faster to use.

**ALTERNATIVES**

This report is provided for information purposes only.

**FINANCIAL IMPLICATIONS**

The RDN receives over \$1 million annually to collect residential recycling on behalf of MMBC. Approximately \$90,000 of the money received is provided to cover increased administration and education responsibilities. A temporary special projects assistant position has been funded with the MMBC money to assist with the curbside collection program and to cover the bulk of the administrative reporting, customer service responses, and data management. Many of the education and outreach activities outlined in this report form part of the business as usual operations of the curbside collection program. The funding received from MMBC enables these to continue (and to be enhanced in the case of the curbside inspections) with a reduction to the residential annual utility fee.

**STRATEGIC PLAN IMPLICATIONS**

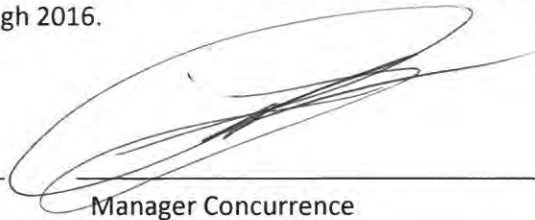
Resident education and outreach as presented in this report is consistent with the Solid Waste Management Plan and is intended to promote service excellence as well as zero waste initiatives.

**SUMMARY/CONCLUSIONS**

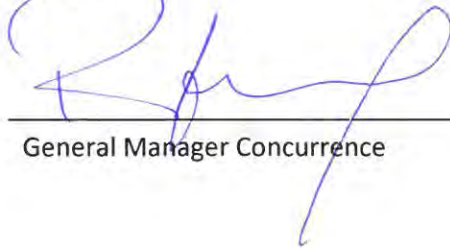
RDN staff have been active in promoting the Packaging and Printed Paper product stewardship program as it pertains to residential curbside recycling. A variety of outreach and education activities have been funded through monies received from MMBC. These activities commenced in advance of the May 2014 launch of the changes, and have continued through 2016.



Report Writer



Manager Concurrence



General Manager Concurrence



CAO Concurrence

Appendix 1 List of 2016 Curbside Recycling Set-outs and Routes Visited

Date	Description of Area	Route #	# Households Tagged	Compliant	Non-Compliant	% Compliance	% Non-Compliant	Non Acceptable material	Positive Interactions	Negative Interactions
26-May-16	Island Highway - Bay Ave (near mini golf), Stanhope, Belson	RC 2	224	154	68	69%	30%	Styrofoam, Plastic bags, Hard plastics, Glass, Scrap metal, Tissue		2
27-May-16	First Ave, Crescent, Arbutus, St Andrews (near gold course)	RD 1	196	107	89	55%	45%	Styrofoam, Plastic bags		0
6-Jun-16	Arrow Smith Golf course, Baylis, Corcan	RE 3	182	100	82	55%	45%	Styrofoam, Plastic bags, Glass		0
7-Jun-16	Nanoose Bay, U shape around Quality Foods, Marina Beachcomber area	RA 1	352	205	147	58%	42%	Styrofoam, Plastic bags and Overwrap, Straws	20	0
8-Jun-16	North of ferry, Taylor Bay Rd, Malaspina, Berry Point Rd, Spruce Ave	RB 4	179	99	80	55%	45%	Styrofoam, Plastic bags	4	0
9-Jun-16	Morning Star Golf Course	RC 1	411	237	170	58%	41%	Styrofoam, Plastic bags, Scrap metal	14	2
10-Jun-16	half of Chartwell, between Windsor and Island Hwy	RD 1	166	121	45	73%	27%	Styrofoam, Plastic bags, Deposit containers	12	0
20-Jun-16	Laburnum, Rupert, Parker, Bennet, Hilliers	RE 3	130	93	37	72%	28%	Plastic bags, Styrofoam	2	0

Date	Description of Area	Route #	# Households Tagged	Compliant	Non-Compliant	% Compliance	% Non-Compliant	Non Acceptable material	Positive Interactions	Negative Interactions
21-Jun-16	Fairwinds Golf Course	RA 1	283	146	137	52%	48%	Styrofoam, Plastic bags	6	0
23-Jun-16	Sanderson, Pym, Temple, Phillip, Aberdeen, Sunrise, Wright	RC 2	350	211	139	60%	40%	Styrofoam, Plastic bags, Scrap metal	2	0
24-Jun-16	Errington, Coombs	RD 2	218	146	72	67%	33%	Styrofoam, Plastic bags	6	0
5-Jul-16	San Paniel, Pioneer Crescent, Moilliet St	RE 1	281	157	124	56%	44%	Styrofoam, Plastic bags, multiple homes with recycling in plastic bags and no bins	7	0
6-Jul-16	Upper Lantzville	RA 2	280	146	134	52%	48%	Metal, Plastic bags, Styrofoam	9	0
7-Jul-16	Cedar	RB 2	152	73	79	48%	52%	14 homes with recycling in plastic bags. Resident said that driver told them blue clear bags are okay	4	1
8-Jul-16	Morning Star Golf Course, Church Rd, Wembley Rd	RC 1	355	225	130	63%	37%	Lots of Styrofoam, Plastic, Glass	5	1
11-Jul-16	Primrose, Jones St, Berwick, Memorial Drive	RD 1	350	236	114	67%	33%	Lots of Styrofoam, very few plastic bags	3	0



Date	Description of Area	Route #	# Households Tagged	Compliant	Non-Compliant	% Compliance	% Non-Compliant	Non Acceptable material	Positive Interactions	Negative Interactions
19-Jul-16	NW Bay Rd, Rocking Horse Pub, Madrona Dr, Beaver Creek Wharf, Stanford Ave, Corfield	RE 2	313	171	142	55%	45%	Plastic bags, Styrofoam	7	0
20-Jul-16	Jinglepot Rd, Mt Benson	RA 3	242	138	104	57%	43%	Plastic bags, Styrofoam	5	0
21-Jul-16	Cedar, Yellow Point Rd	RB 3	246	167	79	68%	32%	Plastic bags, Styrofoam	4	1
22-Jul-16	Morrison, Hirst, Mini Golf, Forsyth	RC 3	372	230	142	62%	38%	Plastic bags, Styrofoam, Scrap Metal	9	0
25-Jul-16	Errington, Middle gate, Wildlife Recovery Center, Grafton Ave	RD 2	225	121	104	54%	46%	Plastic bags, Styrofoam, Scrap Metal, Glass	3	0
3-Aug-16	Jamieson Rd, Faye Rd, Crosley Rd, Gainsberg, Deep Bay	RE 3	220	126	94	57%	43%	Plastic bags, Styrofoam	8	1
4-Aug-16	Dolphin Drive, Schooner Cover, Redden Rd, Collingwood	RA 1	188	128	60	68%	32%	Plastic bags, Styrofoam	6	0
8-Aug-16	Hillier, Whiskey Creek	RC 4	231	138	93	60%	40%	Plastic bags, Styrofoam	4	0
9-Aug-16	Mill Rd, First Ave, Hoylake, Harlech, Chartwell	RD 1	317	235	82	74%	26%	Plastic bags, Styrofoam	4	0
17-Aug-16	Horne Lake Rd, Turnbull, Lake Rd	RE 3	165	114	49	69%	30%	Plastic bags	4	1
18-Aug-16	Lower Lantzville	RA 2	242	184	58	76%	24%	Plastic bags, Styrofoam	3	0

Date	Description of Area	Route #	# Households Tagged	Compliant	Non-Compliant	% Compliance	% Non-Compliant	Non Acceptable material	Positive Interactions	Negative Interactions
19-Aug-16	Gabriola	RB 4	201	130	71	65%	35%	Plastic bags, Styrofoam, Deposit containers	4	0
22-Aug-16	Sunrise Dr, Bunker Place, Gilley Crescent	RC 1	284	172	112	61%	39%	Plastic bags, Styrofoam, Deposit containers	9	0
23-Aug-16	Eaglecrest	RD 1	371	265	106	71%	29%	Plastic bags, Styrofoam, Deposit containers	4	0
<b>Total</b>			<b>7726</b>	<b>4775</b>	<b>2943</b>	<b>62%</b>	<b>38%</b>		<b>168</b>	<b>9</b>

---

**TO:** Larry Gardner  
Manager, Solid Waste Services

**DATE:** September 15, 2016

**FROM:** Sonam Bajwa  
Special Projects Assistant,  
Solid Waste Services

**MEETING:** SWMSC, September 20, 2016

**FILE:** 5365-72

**SUBJECT:** 2016 Green Bin Audit

---

### RECOMMENDATION

That the Select Committee receives the report for information.

### PURPOSE

To provide a review of the recent green bin audit by Solid Waste Services staff.

### BACKGROUND

The Solid Waste department at the Regional District of Nanaimo (RDN) conducted audits of materials collected in residential curbside green bins. Audits were completed to gain a better understanding of the types and amounts of contamination in the curbside composting program and in response to concerns Nanaimo Organic Waste (NOW) has regarding contamination in the residential food waste stream it receives from the RDN.

A waste composition study conducted in 2004 revealed that 34% of the total waste sent to landfill was compostable organic matter consisting of food waste, soiled paper products or yard waste. The “Green Bin” program was launched in 2010 to divert some of this waste from the landfill.

Households separate their materials into food waste, recyclables, and garbage. Food waste is stored in the green bin and set out at the curb for weekly collection. Recycling and garbage collection alternates every two weeks. A split packer truck collects the food waste and garbage or recycling. The contents of the bins are manually loaded into the collection trucks and are sent to NOW.

### METHODOLOGY

The Solid Waste team prepared a sampling framework and protocol customized for this audit, based on the ASTM *Standard Test Method for Composition or Purity of a Solid Waste Material Stream*<sup>1</sup>. The audit was carried out at two facilities, Church Road Transfer Station (CRTS) and NOW. A total of 10 samples (145.88 kg), two samples from each route, weighing an average of 14.58 kg were audited for contamination.

---

<sup>1</sup> ASTM E889 – 82 Standard Test Method for Composition or Purity of a Solid Waste Material Stream available online <https://www.astm.org/Standards/E889.htm>.

To ensure the sampling was random, two trucks were chosen at random by drawing numbers from 1 – 7. For example if 1 and 5 were drawn, the first truck and fifth truck to dump their food waste load were the ones sampled. The route and truck number was recorded, the sample was photographed and divided into sections and each section was assigned a number. One section was randomly picked and a sample was pulled and its weight recorded. A visual check of the entire load was performed to see if compostable liners were used, which types, if there were paper products present and to record any additional observations.

The sample was carefully worked through, looking for contamination which ranged from fruit stickers to plastic lined paper cups. All contamination was recorded, photographed and weighed. Contamination was placed into one of six categories: Packaged food, hygiene products, hard plastics, soft plastics, garbage, and other.

**RESULTS**

A total of 145.9 kg were sorted and an average contamination of 2% was found in ten sorted loads. All loads had some amount of contamination.

The following tables present a list of contamination found in each load. Pictures of types of contamination can be found in **Appendix A** and a detailed log of all samples and can be found in **Appendix B**.

Route	Contamination	Contamination
RA	Sample 1: Microwave dinner package, plastic wrap, aluminum foil, takeout cup, twist ties, fruit stickers	Sample 1: 0.87%
	Sample 2: Candy wrappers, plastic film, tube seal, takeout cups	Sample 2: 3.51%
RB	Sample 1: Cereal bag, cucumber wrapper, children’s toy, twist tie	Sample 1: 0.33%
	Sample 2: Packaged butter, packaged tea, packaged oatmeal, single serve dip container, bread tab, stir stick, takeout cups, plastic label	Sample 2: 4.61%
RC	Sample 1: Bagged lettuce, pet hair, plastic tooth pick, corks	Sample 1: 2.17%
	Sample 2: Packaged cucumber, spice burlap bundle, credit card, microwave popcorn, takeout cups, paper with plastic lining	Sample 2: 1.63%
RD	Sample 1: Pins, plastic bag, plastic tie, shredded plastic, fruit sticker, take out cup	Sample 1: 0.71%
	Sample 2: Single serve food container, meat tray liner, twist tie, plastic lined takeout container, fruit sticker, takeout cups	Sample 2: 3.26%
RE	Sample 1: Plastic cap, bread tab, hard plastic, lint, dryer sheet, straw, candy wrapper, take out cups, fruit stickers	Sample 1: 0.96%
	Sample 2: Coffee pod, feminine hygiene product, plastic razor, chip bag, cookie bag, metal lid, takeout cup	Sample 2: 1.87%

Total amount of contamination found by category:

Category	Weight (g)
Packaged food	841
Hygiene Products	37
Hard Plastics	72
Soft Plastic	330
Garbage	167
Other	1,426
<b>Sum</b>	<b>2,873</b>

## DISCUSSION

The audit resulted in a 2% contamination rate. The RDN is aware of two other green bin audits that have occurred in British Columbia. Metro Vancouver's Waste Composition Monitoring Program 2015 resulted in a 4% contamination rate and the City of Nanaimo's (CON) Green Bin Audit resulted in a .01% contamination rate. The methodology of the RDN green bin audit is similar to the audit conducted by Metro Vancouver as both audits were of random loads and samples conducted at a collection facility; whereas the audit conducted by CON chose specific houses and audited their entire bin. The random selection methods of the Metro and RDN's audits were consistent with the ASTM standard.

A reason why the RDN contamination rate is higher than that of CON is the condition of food waste after it is collected. As food waste compresses, the contamination becomes wet, covered in other food waste and dry contamination absorbs liquid increasing its weight. One reason why the RDN contamination rates were found to be lower than those of Metro Vancouver is our waste collectors have the ability to inspect the refuse and leave behind obvious contamination.

The material found during the audits suggests that residents are not actively hiding contamination with their composting; instead it appears that residents are confused about certain items and there is occasional lack of oversight.

Materials classified as "Other" are the largest category of contamination. This category contains composite material such as plastic lined paper (take out containers), fruit stickers, twist ties and coffee cups. It is important to note that although a number of different items were found, this category was predominately takeout cups, which are lined with plastic. This fact highlights that there is confusion among a number of residents that are participating in the green bin program over what is acceptable and what is not. As takeout cups can be recycled, messaging around takeout cups going into curbside recycling will help reduce this type of contamination.

The second largest category of waste is packaged food. There were eight instances of packaged food in 5 samples. Although this type of contamination does not appear to be common, it is heavy, making the contamination from this category high. Packaged food is a good example of oversight by the resident as the audit suggests that residents are aware that plastic does not go into the green bin.

The rest of the contamination found during the audit were small bits that are obviously not compostable that were likely overlooked by residents.

Additional observation of the loads outside of what was audited showed that almost all residents appear to be bagging their organic waste using compostable bags. There were some instances of residents using non-compostable plastic bags, but this was rare. There were also a number of non-dairy beverage cartons in the loads, which unlike waxed dairy cartons, are plastic lined and cannot be composted.

**ALTERNATIVES**

This report is provided for information purposes only.

**FINANCIAL IMPLICATIONS**

This report is provided for information purposes only, no financial implications at this time.

**STRATEGIC PLAN IMPLICATIONS**

Resident education and outreach as presented in this report is consistent with the Solid Waste Management Plan and is intended to promote service excellence as well as zero waste initiatives.

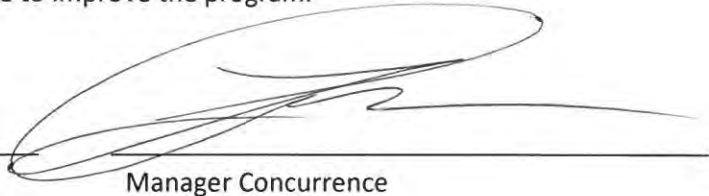
**SUMMARY/CONCLUSIONS**

Overall the audit showed that most residents understand the program very well. It appears there is a desire by residents to collect the waste in bags and, with few exceptions, compostable bags are used. Although it may be troubling to see that all samples contained contamination, the contamination levels are very low and can be attributed to confusing items or items being overlooked. Maintaining low levels of contamination can be addressed by the vigilance of drivers to ensure that bins that contain non – compostable plastics are left behind, educational campaigns explaining that takeout cups and non-dairy beverage cartons go into curbside recycling and encouraging residents to stop and think about what they are putting into the green bin and making sure it is compostable. Future RDN newsletters will focus on these educational opportunities to continue to improve the program.



---

Report Writer



---

Manager Concurrence



---

General Manager Concurrence



---

CAO Concurrence

APPENDIX A Pictures of contamination by categories

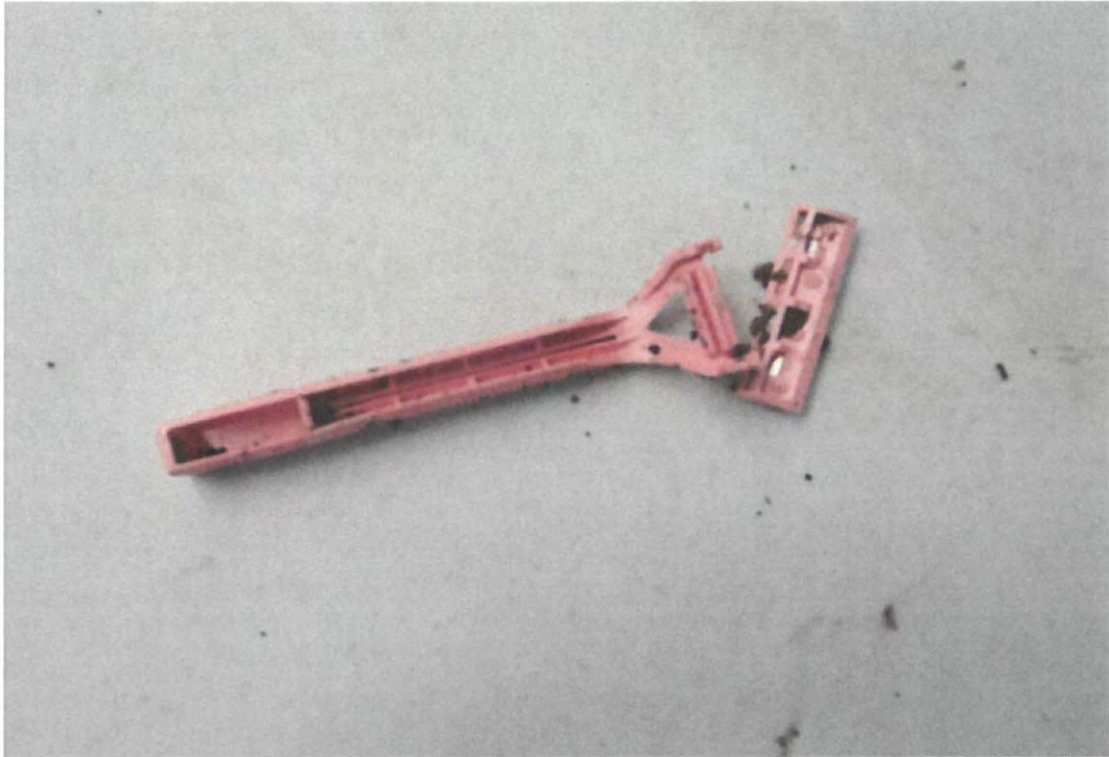


Packaged Food





Hard plastic



Soft plastic



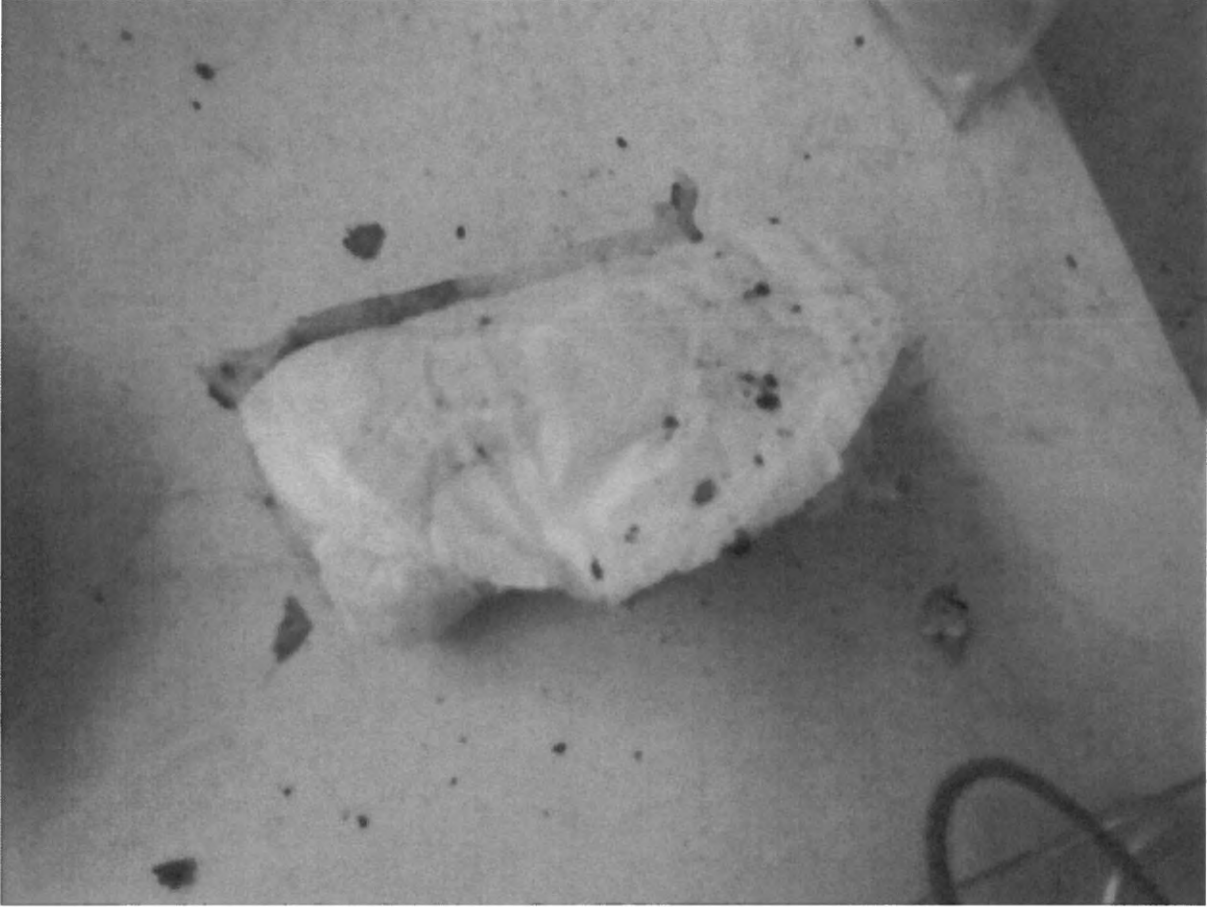
Garbage



Other



Hygiene product



## APPENDIX B Sampling Log

Time	160628 - S1	160528 - S2	160712 - S1	160712 - S2	160718 - S1
Sampling Location	15:10	15:30	15:13	15:59	13:29
Sampler 1	CRTS	CRTS	CRTS	CRTS	CRTS
Sampler 2	Sonam Bajwa	Sonam Bajwa	Sonam Bajwa	Sonam Bajwa	Sonam Bajwa
Route	Meghan Larson	Meghan Larson	Meghan Larson	Meghan Larson	Meghan Larson
Truck #	RA	RA	RE	RE	RD
Total weight of Sample (kg)	51005	51004	51002	51006	510002
Total weight of Sample (g)	12358	11658	1266	137	15116
Category	Weight	Weight (g)	Weight (g)	Weight (g)	Weight (g)
1. Packaged food	57			26	Coffee pod
2. Hygiene Products	0			37	Pad
3. Hard Plastics	0		11	6	plastic razor
4. Soft Plastics	19	plastic wrap	Candy wrapper, plastic film, tube seal	105	Organic chip bag
5. Garbage	6	Aluminum Foil Tim hortons cup, twist tie (2), fruit sticker		47	pepperidge farm cookie bag
6. Other	26			34	Paper cup, metal jar lid
Sum	108	396	88	255	23
Compostable Liners	Yes	409	122	Yes	108
Types present	Biosack, Glad	Yes	Yes	all types	all types
Paper products present?	Yes	Yes	Glad, biosack yes	Yes	yes
Additional observations	One bag visible in load in non compostable bag	Coffee cups and slurpee cups were from same bag. Non dairy beverage containers visible in load	overcast, overall load appeared clean, contamination weighed on July 13, 2016	Overcast, 2 bags of visible garbage not in sample, contamination weighed on July 13/16	50% of load that was not sampled was garbage
% Contamination	0.87%	3.51%	0.96%	1.87%	0.71%

Time	160718-S2	160728-S1	160728-S2	160815-S1	160815-S2
Sampling Location	14:49 CRTS	14:10 NOW	14:30 NOW	14:47 CRTS	15:33 CRTS
Sampler 1	Sonam Bajwa	Sonam Bajwa	Sonam Bajwa	Sonam Bajwa	Sonam Bajwa
Sampler 2	Meghan Larson	Meghan Larson	Meghan Larson	Meghan Larson	Meghan Larson
Route	RD	RB	RB	RC	RC
Truck #		510002	100036	510003	510003
Total weight of Sample (kg)	17.16	16.16	13.16	18.66	15.16
Total weight of Sample (g)	17158	16158	13158	18658	15158
Category		Items	Weight (g)	Item	Weight (g)
1. Packaged food			344	Butter, tea, oatmeal	47
2. Hygiene Products					
3. Hard Plastics	14	Plastic single serve food container	38	Plastic single serve dip container, bread	
4. Soft Plastics	89	Plastic lining from styrofoam		cereal bag, cucumber wrapper	20
5. Garbage		50	Childrens toy	14	Pet hair, plastic tooth pick (did not weigh)
6. Other	456	Twist tie, takeout container, coffee cups, stickers	225	paper cups,	153
Sum	559	2	607	paper/plastic label	247
Compostable Liners	Yes	Yes	Yes	Corks	Yes
Types present	all types	all types	all types	all types	all types
Paper products present?	yes	yes	yes	yes	yes
Additional observations	Tetra pack juice containers visible in load, not in sample section	lots of loose material compared to other loads we have seen	Some non compostable bags present in load, possible bag of hygiene items	most contamination not visible in load	packaged cucumber, burlap spice bundle
% Contamination	3.26%	0.33%	4.51%	2.17%	1.63%

---

**TO:** Larry Gardner  
Manager, Solid Waste Services

**DATE:** September 16, 2016

**FROM:** Jane MacIntosh  
Superintendent, Landfill Operations

**FILE:** 1240-20-SW

**SUBJECT:** **Acquire Used Reconditioned Landfill Compactor**

---

**RECOMMENDATION**

That the Solid Waste Management Select Committee (SWMSC) recommends that the Regional Board approve the purchase of a used reconditioned landfill compactor for an amount not to exceed \$600,000.

**PURPOSE**

The purpose of this report is to request that the SWMSC endorse the purchase of a used reconditioned landfill compactor for an amount not to exceed of \$600,000 in advance of the projected timeline of 2018.

**BACKGROUND**

The current landfill compactor has approximately 18 months remaining service life based on current industry expectations. As the unit approaches the end of service life, the risk of a significant mechanical breakdown increases. Cost savings on the North Berm construction and tip fee revenues higher than projected for 2016 provide an opportunity to purchase a landfill compactor in advance of the current projected timeline of 2018. The advantage of moving up the timeline, and retaining the existing unit as a backup, provides operational efficiency by providing redundancy in compaction equipment. The previous plan had delayed the purchase of a used compactor until 2018 because of the higher priority to complete the North Berm construction which required a large contingency for potential geotechnical issues. The advanced timeline is expected to result in future cost savings realized over the next 10 to 15 years by allowing improved maintenance of equipment and deferment of future replacement costs.

Effective compaction of waste at the landfill is essential to the efficient operation of a sanitary landfill. Compaction has profound consequences to the long and short term operation and environmental impacts on a landfill including: leachate, landfill gas and odour production; vector attraction (e.g. rodents, birds) and litter; differential settlement and site stability; and, fire prevention and control. From an economic perspective, compaction saves space, which can mean substantial cost savings over the life of any landfill. Landfill compactors are specialized equipment with acquisition timelines in the order of several months. The previous plan to defer purchase to 2018 would have resulted in the use of alternate equipment with less effective compaction rates for times when the existing compactor is out of service for repairs.



The landfill compactor is used for approximately 2,000 hours per year. The general service life of the machine is between 10,000 to 12,000 hours (5-6 years) before major factory rebuilds or replacements of engines, transmissions and wheels have to be completed. Rebuilds of these major components costs approximately \$350,000 and adds another 6-years of service life to the machine.

The existing compactor, model CAT 826, was purchased through a lease agreement from Finning over a four year period from 2011 to 2015 at a total cost of \$620,647. The compactor has now logged over 9,000 hours and has approximately one and half years of remaining service life.

If a second reconditioned compactor is to be purchased at the current time, it provides a number of advantages:

- A second compactor provides redundancy given the importance of compaction for efficient landfill operations.
- The second compactor allows the primary unit to be taken out of operation at regular planned service intervals, which will reduce repair costs, reduce disruptions to the landfill work and it is expected to increase the life of both the units. The existing unit, used as a backup, will have an extended service life of approximately 4 years.
- Purchase of the same model of compactor provides advantages given the familiarity by both operators and maintenance staff. Furthermore, as parts are common between the two machines, it is expected that the ultimate of life of an operational unit can be extended for the maximum period (i.e. parts exchange as backup unit is late in its service life).
- Within 4 to 5 years, the current unit could be rebuilt to become the primary unit the reconditioned unit purchased now would be reassigned as a backup (\$350,000 estimated cost). Staggering the use and reconditioning periods of the compactors has the potential to satisfy compaction equipment needs for the next 10 to 15 years. This would be a lower cost than the acquisition of two units over the same period based on a 6 year service life.

The table below lists all the known same model compactors (Cat 826H) currently for sale in North America. Staff has made inquiries with Finning Canada on the availability of a used same model compactor in their Canadian inventory. At this time, they have not identified any available units.

Year	Hours	Rebuilt	Price (CAD)	Location	Vendor	Comments
2010	10,514 frame hours	Yes	\$500,000	London Ontario	Marcel Equipment Ltd.	- 1 year parts and labour warranty - Eligible for extended warranty
2011	8,500 frame hrs	Yes	-	London Ontario	Marcel Equipment Ltd.	- 1 year parts and labour warranty - Eligible for extended warranty
2013	7,750	No	\$493,000	Knoxville , Tennessee	C&K Equipment Co.	- Potentially sold
2006	~12,000	Yes	\$571,000	Knoxville , Tennessee	C&K Equipment Co.	- Potentially sold - Comes with factory 3yr/5000 hour warranty valued at \$21K
2010	8,558	No	\$435,000	Dartmouth, Nova Scotia	Atlantic Tractor & Equipment	
2008	9,295	No		Indianapolis, Indiana	MacAllister Machinery	- Does not appear to have landfill capable wheels
-	-	Yes	\$486,000	Ann Arbor, Michigan	Best Equipment Inc.	- 2015 rebuild - Vendor reports the unit has just been sold
-	-	Yes	\$472,000	Ann Arbor, Michigan	Best Equipment Inc.	- 2015 rebuild - New factory engine - Vendor reports the unit has just been sold
-	-	Yes	\$393,000	Ann Arbor, Michigan	Best Equipment Inc.	- 2015 rebuild - New factory engine - Vendor reports the unit has just been sold
2005	10,812	No	\$420,000	Monterrey, Mexico	MaQuinas Diesel	
2005	10,811	No	\$394,000	Houston, Texas	Tierra Equipment Ltd.	

Vendors report that they are regularly moving units though their service facilities. It is not uncommon to presell the units while reconditioning is underway. Of the units listed above, at the time of writing this report, 5 of the reconditioned units may no longer be available.

The most promising options appear to be equipment available from Marcel Equipment Ltd. in London, Ontario or C&K Equipment Company in Knoxville, Tennessee. These two companies appear to be the premier vendors of used landfill compactors in Canada and the United States collectively. The 3 preferred options are:

1. 2006 Cat 826H – 12,000 frame hours. Complete Cat certified component rebuild. Price includes 3 year/5,000 hour powertrain warranty. This unit is may already be sold. The cost is \$571,000.
2. 2010 Cat 826H – 10,514 frame hours. Cat certified component rebuilds on the engine, torque converter, transmission and transfer case. The components will come with a 1 year, parts and labour warranty supported by the Cat dealer. Since these are being rebuilt to Cat certified standards, there is an option to purchase additional extended warranty from your dealer beyond the 1 year. The compaction wheels will have new 7.25" HDT weld-on tips installed and wheel edges built up. The cost is \$500,000.
3. 2011 Cat826H – 8,500 hours. This unit will be delivered to Marcel within a few weeks. It is expected to be sold for approximately \$400,000 with normal reconditioning but not rebuilding any components. With Cat certified component rebuilds the price will be \$550,000.

The actual selection of the compactor would be based on best value to the RDN and would consider price, availability, actual components rebuilt and transportation costs.

The prices quoted for these reconditioned compactors compare favorably with that of a new unit with current pricing over \$1,000,000.

## ALTERNATIVES

Alternatives in proceeding with the compactor replacement are as follows:

- 1) Approve the purchase of a reconditioned compactor to the maximum amount of \$600,000 at this time.
- 2) Defer purchase until 2018 and acquire a used or reconditioned compactor when the existing machine reaches its end of service life.
- 3) Defer purchase until 2018 and issue a Request for Proposals (RFP) in 2017 for a new compactor to ensure adequate lead time for purchase.
- 4) Alternate direction as provided by the Regional Board.

Appendix A and B summarize the implications of the above options.

## FINANCIAL IMPLICATIONS

The 10 year financial plan included the use of only one compactor and the purchase of a reconditioned compactor in 2018 and then again in 2025 with an estimated total cost over the 10 years of \$1.4 million assuming reconditioned units were available and prices remained relatively stable. Under this revised plan, there is an estimated additional cost of \$250,000 over 10 years; however, because there will be two compactors available, improved compaction rates and landfill efficiencies will be realized. The savings on the North Berm construction project, additional tipping fees and the return of higher volumes in the last year support the purchase of a second compactor at this time. Appendix B shows the projected costs for both options. This plan and timing will extend the life of the existing unit and defer future costs of compactor replacements over a 10 to 15 year time frame.

## STRATEGIC PLAN IMPLICATIONS

This equipment purchase is consistent with key priorities of the 2016-2020 Strategic Plan in the following areas:

- *Focus on service and organizational excellence.* The landfill serves many commercial and regional haulers and compact conditions and efficient service is valued.
- *Focus on the environment.* Ensuring proper compaction is a regulatory requirement due to the potential environmental impact of poorly compacted waste.

## SUMMARY/CONCLUSIONS

The current landfill compactor has approximately 18 months remaining service life based on current industry expectations. As the unit approaches the end of service life, the risk of a significant mechanical breakdown increases.

The costs for landfill compactors have increased significantly in recent years due to new engine designs as well as the value of the Canadian dollar as compared to US currency. The current price on a new equivalent model compactor is over \$1,000,000.

Acquisition of a reconditioned second compactor for a maximum of \$600,000 provides for operational redundancy. This strategy provides the opportunity to rotate the two compactors to extend service lives, with rebuilds, for possibly 10 to 15 years, thereby reducing future capital costs.

Subject to board approval, staff would proceed to negotiate purchase based on best value to the RDN.

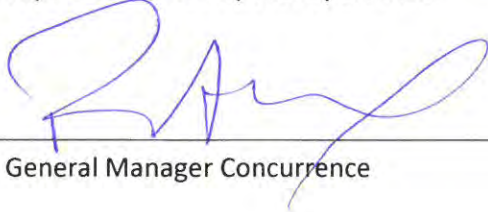


FOR JANE MACINTOSH

Report Writer,  
Superintendent Disposal Operations



Solid Waste Manager Concurrence



General Manager Concurrence



A/CAO Concurrence

## Appendix A

<b>Landfill Compactor Acquisition</b>			
<b>Option</b>	<b>Estimated Cost</b>	<b>Service Life</b>	<b>Considerations</b>
1) <b>2016</b> Acquire Reconditioned Unit	\$500,000 to \$600,000	6 years (extends back up unit life by 4 years to 2020)	<ul style="list-style-type: none"> <li>• Provides operational redundancy as existing unit approaches end of service life</li> <li>• Allows for primary unit to be taken out of service for maintenance</li> <li>• Provides adequate time to source same model reconditioned unit</li> <li>• Defers rebuild period by 4 years on existing unit</li> </ul>
2) <b>2018</b> Acquire Reconditioned Unit	\$700,000 (budget amount)	6 years (2018 is the end of service life for existing unit at current use levels)	<ul style="list-style-type: none"> <li>• Consistent with 5 year budget</li> <li>• Impractical to rebuild existing unit without replacement compactor due to 3 month rebuild period</li> <li>• May be limited on available used models to acquire</li> <li>• Cost for rebuilding existing unit for operational redundancy is \$350,000</li> </ul>
3) <b>2018</b> Acquire New Unit	\$1,000,000+	6 years (2018 is the end of service life for existing unit at current use levels)	<ul style="list-style-type: none"> <li>• 5 year budget does not currently contemplate this level of expenditure</li> <li>• New equipment with lower maintenance costs and higher reliability</li> </ul>

# Appendix B

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
<b>Previous Plan</b>												
One compactor only with no redundancy												
Purchase used in 2018 & 2025			700,000							700,000		\$ 1,400,000
<b>Revised Plan</b>												
Purchase reconditioned in 2016 for additional capacity & recondition existing compactor in 2019 or 2020. Provides estimated 10 years before next compactor purchase	600,000				350,000						700,000	\$ 1,650,000

Notes: all of these plans involve the purchase of reconditioned units vs: new which have current costs of \$1 million