
TO: Carey McIver
Manager of Solid Waste

DATE: April 2, 2009

FROM: Jeff Ainge
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FILE: 5365-72

SUBJECT: Residential Food Waste Collection Field Test Final Report

PURPOSE

To provide the Board with final results of the residential food waste collection field test.

BACKGROUND

In February 2005, the Board approved the Organics Diversion Strategy (ODS), a plan to provide the Board, the general public, and the business community with information on how organic waste will be diverted from disposal. This Strategy was developed in accordance with the RDN Solid Waste Management Plan which identifies organics diversion as an important measure to reach the goal of 75% diversion from landfill by 2010. The Strategy has two main components; commercial and residential food waste diversion.

In April 2005, the Board approved a ban on the disposal of commercial food waste at solid waste facilities. Since the inception of the disposal ban in 2005, the diversion of commercial food waste has averaged 285 tonnes to 345 tonnes per month.

The second phase of the ODS is a residential food waste diversion program. To assess the practicalities of such a program, a residential field test was implemented using three collection routes – an urban route in the City of Nanaimo, a suburban route in Qualicum Beach (Chartwell) and a rural route in the Regional District (Cedar).

The field test ran between November 2007 and October 2008. The test was co-funded by a grant from the Federation of Canadian Municipalities (FCM) through the Green Municipal Fund program. Final expenditures have been tallied and the project came in as per the 2007 revised budget which itself was significantly less than the initial application budget.

A variety of data was collected during the test period, and costs were closely tracked so as to be able to report to the Board and to FCM. Staff have completed compiling the information and a final project report has been submitted to FCM in order to fulfill the grant requirements. Table 1 (below) shows a breakdown of the final expenses incurred during the twelve month field test.

The report submitted to FCM includes a great deal of detail, such as the various planning and implementation phases as well as participant survey responses which the Board has been privy to through update reports over the past eighteen months. For the Board's information a summary of the various project components, along with the final collection and diversion statistics are included herein.

The following provides the results of the various components examined during the project.

Food Waste Collection Project Components

Collection Containers

The 47 litre “green bins” proved to be of suitable capacity for the amount of food waste collected. The collection staff did not identify any major issues with the containers however some residents found the handle height and wheel size to be a source of frustration. Feedback from participants indicates the smaller “kitchen catcher” pails performed well.

Promotion and Education Material

Residents of the three participating routes were informed of the project initially by a letter from their respective Mayor or Board Chair. An information package was included with each container when it was delivered to the house. Over the course of the 12 months each home on the project routes received three newsletters containing answers to frequently asked questions, updates on collection and diversion weights, survey results and so on. When the 12 month period was coming to an end participants were advised by letter from their Mayor or Board Chair that food waste collection would continue. The newsletters were well received with the format and eye-catching appeal commented on by many participants.

Drop In Sessions

Drop in open houses were hosted for each route at the start of the project. Attendance varied with approximately 50 people attending the Cedar sessions, 60 attending the Chartwell sessions and over 100 attending at the City of Nanaimo sessions. Staff and representatives from the municipalities also attended, along with a composting facility representative and the RDN’s collection contractor.

Website

A dedicated website was set up and is still averaging over 60 visits per week (www.rdnfoodwaste.ca). Because the project crossed jurisdictional borders, the site was not set up within the existing RDN or municipal websites but can be accessed from them. When it was launched a password protection system was put in place to limit access to participants only. The password was provided to participants as part of the start up information. This restriction was lifted after six months. The website contains the newsletters, diversion updates, answers to frequently asked questions, helpful hints, and scheduling information and updates.

Collection Truck

A vertical split packer truck was leased for the twelve month project. Split packer trucks are capable of collecting two separated waste streams concurrently and provide efficiencies of collection. In terms of utilization and scheduling, the truck was used by all three collection partners with the City of Nanaimo coordinating servicing. This worked well although the Town of Qualicum Beach reverted to using a separate Town vehicle for food waste collection after six months. The leased vehicle was an older model that required some minor modifications but on the whole provided an opportunity to see the efficiencies that can be gained.

Container Liners

A supply of compostable liner bags was provided free of charge to each participating home. The use of a liner in the kitchen catcher reduces the “yuck factor” and makes transfer of material from kitchen to green bin a no-mess process. Although liner bags are not mandatory, if a bag is used it must be certified compostable or be a paper bag. As the supplied liner bags were used up, residents were faced with purchasing replacements if they chose to continue using a liner. The number of stores stocking compostable liners increased over the 12 month period with retail prices ranging from \$3.87 to \$7.99 for various brands of the small kitchen catcher sized liner. The majority of comments received by way of

phone calls, emails, and survey responses were from residents expressing displeasure at the cost. Staff will be approaching the larger grocery retailers to discuss options for sourcing and supplying compostable carry out bags that can be used as liners.

Processing the Food Waste

The food waste is being received at the International Composting Corporation (ICC) facility at Duke Point. There have been no issues or concerns expressed by ICC or collection staff regarding the material being received at ICC, although as the free supply of compostable bags ran out some residents chose to use regular plastic bags for their food waste. This results in contamination of the compost and requires extra work of the ICC staff to remove it. Overall the ICC staff report a very low degree of contamination from the residential food waste stream.

Diversion Statistics

According to a Gartner Lee Ltd. consultants’ report prepared in 2005, an estimated 53% of the residential waste stream is food waste and non-recyclable paper. In planning for this project staff assumed a reasonable diversion rate of 50% of that material, targeting 160,000 kgs for the year. That equated to approximately 1.7 kg of acceptable material per household per week (or 6.8 kg per household per month) diverted from the landfill.

In actuality over 237,000 kgs of food waste was collected and diverted from the landfill. This is a capture rate closer to 77% of available material from households. Table 1 illustrates the volume collected over the 12 months for each of the three routes.

Table 1: Volume of Food Waste Collected on Each Route

Route	Number of Homes	Total FW Collected (kg)	Average route weight per week (kg)	Average per household per week (kg)
Qualicum Beach Chartwell	500	64,710	1,244	2.49
Nanaimo Route E-3 Cilaire	720	94,706	1,821	2.58
RDN Route 52 Cedar	765	80,430	1,547	2.02

The figures shown in Table 2 indicate that diversion rates for household waste doubled on the two routes that we had historical data for. Diversion can be defined as recycling materials and food waste collected at the curb but not sent to the landfill. Chartwell and the City of Nanaimo routes are achieving a diversion rate of close to 70%. The Cedar route is achieving 56% diversion. Part of this lower rate can be attributed to fewer free community newspapers being delivered to the door, hence a lighter recycling weight, as well as a higher number of home composters in use reducing the food waste collection weights. What can be inferred is that residential food waste collection can have an impact to diversion rates on rural as well as the more urban collection routes.

When implemented across the region, this increase in diversion from landfill bodes well for reducing greenhouse gas emissions and extending landfill life.

Table 2: Diversion Comparison with Previous 12 Months

Route	12 months prior to food waste collection study (Weights in kg)			Over course of Field Test period (Weights in kg)			
	Average MSW / household weekly	Average Recycling / household weekly	Diversion rate % (curbside recycling)	Average MSW / household weekly	Average Recycling / household weekly	Average FW / household weekly	Diversion rate % (FW + Recycling)
Qualicum Beach Chartwell	N/A	N/A	N/A	2.79	3.0	2.49	66%
Nanaimo Route E-3 Cilaire	6.32	3.02	32%	2.56	3.15	2.58	69%
RDN Route 52 Cedar	6.68	2.27	25%	3.48	2.35	2.02	56%

Note: No earlier data is available for Chartwell because it was not collected as a separate route prior to this study.

Monitoring and Evaluation

Monitoring and evaluation was undertaken to provide the information required to design and implement a region-wide program to serve roughly 50,000 households.

Set-out counts

Over a four week period in November and December 2007, a series of set-out counts were performed to gauge the early acceptance of the program. Results of those early counts indicated that anywhere between 40% and 63% of households placed a green bin at the curb for collection on any one scheduled collection day. Participation during those first few weeks was highest in the urban/suburban routes and least on the rural route.

Although no further formal counts were performed, staff visited each route a number of times over the course of the study period and estimated that participation improved over the course of the twelve months. Participation on the rural route (Route 52 in Cedar) continued to be less than the other two routes, but seemed to be consistently above 60%.

A survey sent out after five months was completed by 23% of participants. Almost 80% of respondents indicated they were putting food waste at the curb every week, and a further 15% indicated a set-out every two weeks.

As the study period drew to a close, the collection drivers were asked for their estimation of average participation. In all cases the numbers exceeded those obtained from the early set-out counts.

Participant calls

Over the course of the 12 month project a number of householders contacted the municipalities or RDN offices with questions and concerns or to express satisfaction regarding the project. Phone calls and emails received at the RDN were logged and responses noted. The collection of one container of garbage every two weeks was a concern expressed by some residents throughout the project. The dedicated email address was put to good use at the start of the project; it has been used less as time passed.

Participant Surveys

Two participant surveys were mailed out to homes on the three field test routes. Responses could be submitted on-line, or completed by hand.

The first survey in March 2008 focused on the start of the field test, asking questions about the information provided, the containers, ease of getting started, and impact to the household garbage. The second survey, in October 2008, asked about liner bags, challenges and frustrations, and support for expanding the program to other regional residents. Overall response rates for the two surveys were very encouraging with 23% for the first and 20% for the second.

Table 3 provides an overview of the response rates.

Table 3: Survey Responses

Route	Number of Homes	Survey 1 responses received	Set-out Green bin weekly or every second week	Noticeable difference in garbage	Survey 2 responses received	YES Food Waste Collection should go region-wide
Qualicum Beach Chartwell	500	26% responded 130 responses	97% of respondents	89% of respondents	25.4% responded 127 responses	98% of respondents
Nanaimo Route E-3 Cilaire	720	21.25% responded 153 responses	95% of respondents	78% of respondents	18.75% responded 135 responses	99% of respondents
RDN Route 52 Cedar	765	22.6% responded 173 responses	88% of respondents	76% of respondents	17.4% responded 133 responses	96% of respondents

Next Steps

In September 2008 the Board approved the addition of food waste to the upcoming Request for Proposals (RFP) for the RDN Garbage Collection & Recycling Service and approved continued collection of food waste on Route 52 in Electoral Area A. The collection of food waste has continued on Route 52 as well as the two municipally collected routes.

Preparation of the RFP is underway, with an implementation timeframe shown in Table 4.

Table 4: Food Waste Collection Program Implementation Schedule

Task	Schedule
1. Pre-Qualification of proponents S WSI, IPI, WM	Complete
2. RFP or Tender process S Carbon Neutral Operations S Collection Options	RFP chosen as preferred process
3. RFP Documentation prepared S Municipal partners consulted	Underway
4. RFP Issued	April 2009
5. RFP Closes	June 2009
6. Contract Awarded	July 2009
7. New Collection System Implemented	April 2010

ALTERNATIVES

1. No alternatives are presented in this report as it is being submitted for information only.

FINANCIAL IMPLICATIONS

There are no financial implications to receiving this report however for the Board's information the field test was completed within the set budget. The original grant application in 2006 was based on a cost of \$180,000 to carry out a six-month test. That figure was revised in 2007 to \$161,000 for a 12 month test. The final expenditures totaled \$161,370, of which \$80,685 will be covered by the Green Municipal Fund.

INTERGOVERNMENTAL IMPLICATIONS

The collaboration between Regional District, City of Nanaimo and Town of Qualicum Beach staff in the planning and implementation of the field test has been excellent. Issues were addressed promptly, and information sharing enabled each of the partners to respond to complaints and participant concerns in a unified way.

SUSTAINABILITY IMPLICATIONS

Collection of residential food waste contributes to the region's sustainability by encouraging residents to reduce the amount of waste they send to the landfill thereby saving expensive landfill capacity as well as reducing greenhouse gas emissions. The implementation of region-wide residential curbside food waste collection is strongly supported by many residents currently on the pilot routes and stands to reduce additional landfill GHG emissions as well as support local industry.

SUMMARY/CONCLUSIONS

The Residential Food Waste Collection Field Test final report has been submitted to the Federation of Canadian Municipalities in order to fulfill the grant agreement requirements. The final tally of expenses for the twelve month field test came in on budget. Food waste collected averaged 2.3 kg per household per week which as a result boosted diversion rates considerably to close to 70% for the two more urban routes. The Cedar route achieved 56% diversion, up from the previous 25%.

The Board has directed staff to include food waste collection in the new residential garbage and recycling collection contract. The current contract for those served by the RDN contractor has been extended an additional year while staff prepare a Request for Proposals. Three experienced collection firms have been pre-qualified to participate in the process, which targets a new contract being awarded in July 2009 for April 2010 startup.

RECOMMENDATION

That the Board receive the Residential Food Waste Collection Field Test Final Report for information.

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COMMENTS