
TO: Larry Gardner
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DATE: October 13, 2015

FROM: Jeff Ainge
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MEETING: RSWAC, November 5, 2015

FILE: 5370-01

SUBJECT: Curbside Collection Program – Yard Waste Collection

RECOMMENDATION

That the report be received for information.

PURPOSE

The Regional Solid Waste Advisory Committee (RSWAC) included curbside collection of residential yard and garden waste as an option to be considered during the current Solid Waste Management Plan (SWMP) review.

BACKGROUND

The Regional District of Nanaimo (RDN) provides curbside collection of residential garbage, recycling and food waste to over 23,500 single family and equivalent homes located in the seven Electoral Areas, District of Lantzville and City of Parksville. A further 4,000 homes in the Town of Qualicum Beach receive garbage collection service from Town staff, with recycling and food waste collection provided by the RDN. The City of Nanaimo provides collection services to 26,000 residences within their boundaries.

For the purposes of this report, yard waste refers to the organic waste material produced by a residential property. This would include lawn clippings, hedge trimmings, waste from a vegetable garden and waste from flowerbeds. Not included would be kitchen waste, dimensional lumber, yard and garden tools, or other man-made products used in the yard. Currently yard waste is not collected in any of the region's local government curbside collection programs.

History

Between 1993 and 2001, the RDN distributed approximately 16,500 subsidized backyard composters to single family households in the region. Distribution was through a combination of one-day sales, sales through non-profit organizations and sales at RDN disposal facilities. When the composter distribution program was initiated there were few options available to purchase a back yard composter unit. Over time, the private sector began to offer a multitude of composter designs, available at many price points for a resident wishing to purchase a back yard composter. This raised the issue of using tax dollars to compete with the private sector which led the Regional Board to discontinue funding of subsidized composters.

In 2000, the RDN commissioned a survey to examine garbage disposal and composting habits among residents of the RDN. Slightly more than half of the respondents (53%) were in favour of a proposal to collect yard waste. This positive response was slightly higher for respondents in urban areas with the City of Nanaimo at 55%, the City of Parksville at 58% and the Town of Qualicum Beach at 48%.

In 2001, the RDN received competitive bids to collect yard waste as part of its curbside garbage and recycling collection contract tender process. Based on the results of this tender process, the Board directed staff to conduct customer surveys in the urban and suburban areas of the RDN to determine willingness to receive yard waste collection at an annual cost ranging from \$17 to \$30 per household based on collection frequency. A telephone survey of 400 homes was completed in July 2002.

Only one-third of residents polled supported the highest cost option of \$30 per year for collection every two weeks for 9 months. When the collection frequency was dropped to monthly for 9 months at a cost of \$25 per year, willingness to pay increased to 42%. When the collection frequency was dropped to four times a year at cost of \$17 per year, willingness to pay increased to 53%. The highest level of support for yard and garden waste collection was for the lowest level of service and the support was limited.

Based on these survey results the Regional Board decided not to implement a curbside yard waste collection program for residents of the urban areas served by the RDN curbside collection program.

In 2009, RDN staff issued a Request for Proposals (RFP) for the curbside collection of garbage, recycling and food waste. Similar to the 2001 tender for this service, the RFP requested costs to collect yard waste in the urban and suburban areas of the RDN (excluding the City of Nanaimo) under two service options: bi-weekly collection for nine months and monthly collection for nine months. Proponents' pricing ranged between \$18.00 to \$36.36 per household, depending upon frequency of service over nine months. Based on these collection cost proposals as well as the cost to process yard waste at a licensed composting facility, staff estimated that the user fee for nine-months of bi-weekly collection service would be \$50 annually. The Regional Board did not direct staff to proceed any further with yard waste collection at that time, but did approve the implementation of curbside collection of residential food scraps.

In the first quarter of 2015, staff promoted an online survey seeking information on a number of topics pertaining to solid waste services and the SWMP review process. In response to Question 7 "How does your household currently manage yard and garden waste?", 63% of respondents indicated they compost yard waste at home. Almost 40% reported taking their yard waste to a depot. Other responses included burning, using a collection service, and not producing yard waste. Note that respondents could check multiple boxes to cover all their yard waste management methods meaning the results add up to more than 100%.

When asked if they would be willing to pay a higher curbside user fee if it included yard waste collection service, 60% of respondents indicated no. Of the 40% who indicated they would be willing to pay, 57% of them would support an increase of less than \$30. Only 14% of respondents interested in paying for yard waste collection would support a fee increase of \$50 or more to receive it.

Current practice

With regards the findings of the 2012 Waste Composition Study, the materials in residential curbside waste received at the landfill included a small amount of yard waste (2%), or an estimated 223 tonnes. A large portion (25%) of the multi-family sample consisted of yard waste. No yard waste was found in the self-haul samples destined for disposal at the landfill. Overall, the study estimated less than 3,000 tonnes of yard waste was disposed of in the landfill in 2012.

Many residents currently self-haul this material to the Regional Landfill, the Nanaimo Recycling Exchange, and the Church Road Transfer Station as well as to several other privately operated sites in

the region, or they pay for private hauling services. These options are well used by residents and the commercial sector throughout the RDN, resulting in roughly 12,000 tonnes of yard waste diverted from disposal in the landfill each year. Unfortunately, Yard Waste is also a frequently illegally dumped item with residents tending not to understand the implications of disposing of organic material in public spaces.

Composting

The amount of yard waste composted in residential backyards has been the subject of studies in various communities however no formal research has been done in the RDN. Figures used to determine the amount of waste composted annually in the backyard range from 100 kg/home (National Solid Waste Benchmarking Initiative) to 450 kg/home (North Shore Recycling Program 2010 study). If we take a conservative 150 kg, and multiply it by the 16,500 compost units sold through the subsidized sales events, 2,475 tonnes of residential yard waste is managed on-site.

Backyard burning

Demand for yard waste collection options is related to the implementation of backyard burning bans. Within the RDN, residential backyard burning regulations vary between municipalities and electoral areas. Although land clearing and backyard burning is generally prohibited within municipal boundaries, there are few restrictions in the Electoral Areas and what restrictions are in place tend to be administered by the local Fire Protection Area, or the Ministry of Forests in the height of a dry summer.

In the Town of Qualicum Beach, where backyard burning is not permitted within the urban containment boundary, a free wood chipping program is offered to residents in the spring and fall of each year. The City of Parksville, where burning is not permitted during the period April 15 to October 15, also provides seasonal branch chipping. In the City of Nanaimo backyard burning is prohibited at all times of the year but no chipping program is offered. In Electoral Area H (Bowser, Deep Bay), where there are currently no backyard burning restrictions, staff provided two yard waste drop-off events in November 2008 and April 2009. Participation at both events was minimal with only 5 households delivering a total of 3 tonnes of material at each event which equated to a cost of \$336 per tonne.

Processing

As noted previously in this report, yard waste was not collected prior to the introduction of residential food waste collection in 2010. The privately owned processing facility which receives the curbside organics material (Nanaimo Organic Waste (NOW) formerly International Composting Corporation) was established and licensed to receive source separated organic waste. They have been able to control their process by knowing the ratios of the various feedstocks – the carbon and nitrogen components as well as the moisture content of the mix.

The waste stream management license for NOW requires all in-bound material to be tipped inside the building. Implications to accepting a yard waste/food waste blend include the need to be able to receive the material (and keep it indoors), sort it for contaminants, extract oversize items such as branches for pre-processing (shredding), and have a fair degree of confidence in the mix as it enters the composting system. Seasonal variations in the amount of yard waste available, and if collection was only provided for nine months, also create processing challenges. If yard waste was collected without being mixed with food waste, some of the receiving and processing concerns may be lessened.

Collection Considerations

Many curbside collection programs servicing urban and suburban areas provide yard waste collection service. Processing regulations for yard waste only are less onerous than those required for processing

food waste. For existing yard waste collection programs, adding food waste to their collection may require some processing infrastructure changes and capital outlay, but usually no change is needed for the collection side. It is more challenging to add yard waste to an established food waste collection program in large part due to collection vehicle capacity, collection container types and sizes, seasonal variations of material to be collected and labour considerations.

With the more restrictive backyard burning regulations of the urban areas, a municipality in the RDN could implement a yard waste collection service now without the need to involve the RDN. The challenges of collection and processing would still need to be addressed though.

Without undertaking a formal RFP for yard waste collection or exploring processing options and demand for the service, this report will assume that yard waste collection can be provided to all homes currently receiving curbside service in the region. It also assumes approximately 12,000 tonnes of residential yard waste is available for capture (material noted in the Waste Composition Study and material already diverted through RDN and other facilities). It excludes additional material that may come into the system from other sources (displaced from home composting, backyard burning, or illegal dumping activities). Based on the work done in 2009 and 2010, a collection service could include:

- Yard waste collected separately in dedicated trucks.
- Nine month service (March-November) of bi-weekly (every-other-week collection) on an add-a-day schedule.
- Same service provided to urban, suburban and rural parts of the region.
- Residents provide their own containers to an approved size and standard (such as Kraft bags or regular garbage cans with decals) suitable for manual collection.

Private collection

Subscription yard waste collection services are available to residents in the region, but to date have not seen a large uptake. In addition to one or two of the local commercial haulers who can provide collection, a Victoria based company Community Composting has provided subscription yard waste collection to this area since 2011. Subscribers are provided a wheeled container for their yard waste which is emptied every four weeks on a scheduled pickup day. Subscribers also receive a 20 litre bag of composted soil with each pick up. The company provides two size choices for the yard waste containers; the large cart has a capacity of 360 Litres (95 gallons) while the smaller cart has a capacity of 120 Litres (32 gallons). A one-time refundable container deposit of \$95.00 is required prior to the service commencing. The deposit is fully refunded upon termination of service and retrieval of the container. Subscription rates for the service levels offered are:

- 1 year subscription (12 pickups, every 4 weeks): 12 x \$22.00 (plus GST) = \$277.20
- 6 month subscription (6 pickups, every 4 weeks): 6 x \$24.00 (plus GST) = \$151.20

The company reports that they have 185 active subscribers receiving their service in this region.

IMPACT ON DIVERSION

Currently yard waste is not counted in the region's overall diversion statistics. The waste composition study completed in 2012 indicates that that roughly 80% of yard waste generated in the RDN is already diverted from landfill disposal. Consequently curbside collection of yard waste would not contribute to any significant increase in waste diversion. Although curbside collection would reduce greenhouse gas emissions by reducing vehicle trips to the various yard waste facilities, compulsory collection could also provide an incentive to produce more yard waste since residents would be paying for the service whether they used it or not. The most significant contribution to the region's sustainability goals

associated with the introduction of curbside yard waste collection would be the rationale to extend backyard burning bans to more areas in the RDN.

FINANCIAL IMPLICATIONS

Based on the work done by staff in 2010 for the RDN collection RFP, the inclusion of yard waste collection at the curb would increase the utility fee by an estimated \$50 per household (for 9 months of bi-weekly collection and processing). A formal RFP for a defined service would be required to obtain a more accurate cost. In all likelihood, the current collection vehicles utilized for the region's collection programs are fully committed so additional trucks would be required to provide the service and revised pricing may vary from the 2010 proposals.

Adding a new waste stream to curbside collection (or implementing a major change) does result in an increase in administrative support required to handle calls and enquiries from residents, and for program oversight. Staff estimates this could amount to 0.2 FTE but could probably be accommodated in the existing staff complement at the City of Nanaimo and RDN.

By capturing the yard waste currently being received at RDN and private facilities, revenues at those facilities will be impacted. This may also impact the facilities they in turn send the ground material to (private composting plants, hog fuel burners etc.).

REGULATORY AUTHORITY

No additional authorities would be required for the RDN to introduce yard waste collection as part of the curbside collection program.

SUMMARY/CONCLUSIONS

Support for introducing curbside yard waste collection hovers around 40 to 60% based on surveys completed in the region over recent years. That support drops when respondents are asked about their willingness to pay for such a service. Even without curbside collection, approximately 12,000 tonnes of yard waste is diverted from disposal each year due to residents' use of yard waste drop-off facilities coupled with backyard composting activity. Compare this with less than 3,000 tonnes estimated to enter the landfill, of which only an estimated 225 tonnes is attributed to curbside sources.

The City of Nanaimo reports their intention to conduct a public engagement and learning piece in Fall/Winter of 2015. With the advent of automated collection in Nanaimo, Council have asked staff to review the appetite of City residents for collection of Yard Waste. Staff and Council in Nanaimo regularly hear from residents that they wish to receive collection of Yard Waste, the question remains as to how much they are willing to pay. At a Council meeting in June 2015 City staff reported to Council that, of the 15 largest Cities in BC (of which Nanaimo is ninth), nine of them collected yard waste. City staff also noted as part of this report that the average user rate of the 15 largest municipalities in BC is \$197 per household per year, compared to the City rate of \$99.75 per year.

Currently yard waste is not counted in the region's overall diversion statistics however based on the 2012 waste composition study and data from facilities handling this material, roughly 80% of yard waste generated in the RDN is already diverted from landfill disposal. The collection of yard waste at the curb will not contribute significantly to the region's diversion goals, but the impression is that such a service will provide a much higher level of convenience for the resident generating the waste.

Curbside collection of yard waste would reduce greenhouse gas emissions by reducing vehicle trips to the receiving facilities, but compulsory collection could also result in more yard waste being captured since residents would be paying for the service whether they used it or not. The most significant contribution to the region’s sustainability goals associated with the introduction of curbside yard waste collection would be the rationale to extend backyard burning bans to more areas in the RDN.

<i>Option Discussed</i>	<i>Estimated Costs to Implement</i>	<i>Diversion Impact</i>
Curbside collection of yard waste	<p>An estimated additional \$50 per household/year to provide curbside collection of yard waste</p> <p>\$16,500 staffing costs (0.2 FTE to administer the collection of a fourth waste stream)</p>	<p>Assuming capture of 70% (157 tonnes) of yard waste available from the amount in the curbside waste stream =</p> <ul style="list-style-type: none"> • 0.3% diversion increase for the overall region’s disposed waste <p>If curbside collection is introduced it is likely to capture a large portion of yard waste already diverted (12,000 tonnes) or managed through composting. The impact is weighted to convenience rather than diversion.</p>

Two potential actions could form part of the focus if this item is included in the solid waste management plan:

1. Work with Electoral Area directors and planners on backyard burning ban bylaw development.
2. Formally assess the demand and willingness to pay for yard waste collection throughout the region.

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