

# Sort, Toss, Roll:

By Charlotte Davis, City of Nanaimo



## Automated Solid Waste Collection Services Introduced to Nanaimo

Starting in the fall of 2017, automated solid waste collection services have been implemented to homes in Nanaimo, Vancouver Island, British Columbia. The initial business case presented to Council was based around reduction of injuries to collection staff, secondary to that was the notion of improved service to residents and increased diversion.

With 28,000 homes in Nanaimo we opted to introduce this project in two phases. In the first phase, approximately one third of the city received the new service in fall 2017. The rest of the city will receive the new service this coming summer. This phased approach has given us the opportunity to iron out any issues that came up during the first phase. Most of the lessons learnt have related to proper cart placement and

identifying the methods of communication that provide the best value.

In line with the phased approach we have purchased trucks and carts in two phases. In total, we have purchased seven 31-cubic-yard split stream trucks with Labrie bodies and one 14-cubic-yard truck with a Ginove body. The small truck will be implemented as part of the second phase in our tighter, more restrictive areas. The small truck will service approximately 400 homes per eight-hour day and the larger trucks will each service approximately 600 homes per day. For a medium density city, with all disposal facilities located in the south of town and an 85 per cent participation rate, these numbers provide maximum productivity.

Once fully implemented, productivity will be greatly increased compared to the former manual collection service because the service will now be provided solely by

city staff utilizing a single fleet of split body trucks. By utilising split body trucks, we are able to cease using a contractor for the collection of recycling and reduce the number of vehicles on the road by 50 per cent.

Further benefits here lie in the fact that the new fleet is powered by Compressed Natural Gas which is 25 per cent greener and makes the trucks considerably quieter. The split trucks allow us to collect two streams of waste from each home in Nanaimo weekly; during week one we collect organics and recycling and during week two we collect organics and garbage. Because we are now using carts we are also able to collect yard waste comingled in with food waste in the organics carts (residents have loved this added service).

Wheeled carts were purchased from Rehrig Pacific Company. Our attractive carts are hot stamped with city logos on the

sides and the lids are colour coded to act as the last line of defence in helping residents sort their waste correctly.

As for sizes, all single-family homes received a standard set. This consists of one 120-litre black garbage cart, one 120-litre green organics cart and one 240-litre blue recycling cart. All homes with suites received one upsized set of carts; 240 litres for garbage, 240 litres for organics and 360 for Recycling. We asked residents to trial their carts for the first three months of the program (during which time we will still accept extra bagged waste). After the three-month trial we will no longer accept extra waste but residents have the ability to upsize their recycling carts free of charge, and to upsize their garbage cart for \$100 annually.

While carts are not equipped with locks as standard, they can be fitted with gravity locks, which are available by request for those experiencing rodent problems. So far, very few residents have requested a lockable cart. The carts are owned by the city which makes us responsible for their repair and replacement.

Once both phases of the project are fully implemented, we will begin to work on our diversion rate. The plan to increase diversion is to incentivize residents to recycle more and throw away less by introducing a “pay as you throw system.” The RFID technology inside our wheeled carts gives us the ability to keep track of how often people set out their cans. By allowing unlimited set outs of recycling and only 12 set outs of garbage annually, as part of the base fee, residents would hopefully recycle more. Every additional set out of garbage would be billed as extra. One anticipated additional benefit to this practice is that decreased weekly participation should allow us to grow our collection routes somewhat and thus delay the purchase of additional trucks.

In summary, there have been three big wins to the introduction of automated solid waste collection in Nanaimo:

1. Injury reduction: Our workers are no longer at such a high risk of musculoskeletal injuries. To minimize the risk of new types of injuries we worked with an ergonomic specialist to train operators in best practices for avoiding repetitive strain injuries that can be associated with the use of joysticks.
2. Improved service to residents: The overwhelmingly large percentage of the population prefer the new service. It's cleaner, tidier, more comprehensive (now with yard waste), and it is easier to manoeuvre.
3. We have gotten smarter: With the built in RFID cart technology coupled with the onboard computers, we are now collecting smarter than ever. Some benefits include the ability to check progress on route in real time and the ability to

contact specific residents when we have a compliance issue, for example, contamination or cart placement issues.

We look forward to rolling out the second phase of implementation very soon. ▀

*Charlotte Davis, Manager of Sanitation, Recycling and Public Works Administration for the City of Nanaimo received the 2017 Women's Ambassador Award by the Public Works Association of BC (PWABC) at their annual conference.*

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