

2019

SOLID WASTE SUMMARY REPORT



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Executive Summary

This report presents the results of the City of Nanaimo's curbside collection program of landfill, recycling and organics *municipal solid waste* (MSW). With 2019 being the first full year of automated curbside collection, this report serves as a benchmark for progress in future years.

Nanaimo is one of a few municipalities collecting all three waste streams with a single vehicle, dramatically reducing greenhouse gas emissions by eliminating separate vehicles. 2019 was the first year with all routes using the standardized curbside collection carts for the entire year, following two phases of automated curbside implementation in October 2017 and July 2018. By the end of 2019, there were 28,824 households serviced, representing a growth of 520 households (1.84 percent) from year start to end.

The three main goals for implementing an automated curbside collection program were to improve worker safety, increase resident convenience, and add yard waste collection service. These goals were all achieved, with significant decrease in the incident rate and lost time.

Residents utilized the larger organics carts to continue diversion of food waste and soiled paper, and the additional ability to add leaves, grass and light trimmings in their curbside cart. With the inclusion of yard waste and a larger garbage waste cart, residents made use of increased convenience as shown by reduced self-haul trips to the landfill. The RFID tagging system allows drivers to make note of non-compliance in a system that scans the cart, links to the address, and allows dispatch staff to focus residential education on specific ways to comply with the automated program.

In 2019, overall diversion from the landfill of MSW collected at curbside was at 66 percent, up percent from the previous year. There was an increase of 88 kilograms per household in overall curbside collection of MSW, which is mostly attributed to organics waste. With residents utilizing the larger volume garbage cart, there was a ten percent decline in residential self-haul trips to dispose of landfilled waste.

Kilograms per Household	2016	2017	2018	2019
Landfill	140	140	169	191
Recycling	118	118	126	126
Organics	133	133	182	247
Total Curbside Collected	390	390	477	565
Landfill Diversion Rate	64 %	64 %	65 %	66 %

Introduction

The primary function of Public Works' Sanitation unit is to provide curbside collection of landfill, recycling and organics MSW streams for single-family residences in the City of Nanaimo. The unit also services streetscape waste bins, with collection of 106 garbage receptacles over the City. The Sanitation unit does not collect from waste receptacles in City Parks, or from select bus stops serviced by the Regional District of Nanaimo.

Nanaimo transitioned to a fully automated curbside collection service, with two phases of automated curbside implementation in October 2017 and July 2018. Each curbside collection route uses a single collection truck, operating on a biweekly add-a-day collection system. Organics waste is collected every week, and collection of garbage and recycling alternates each week.

The curbside collection program services single-family households up to four units in size. The standard cart sizes per household, along with the upsize and downsize options, are shown in Table 1. Properties with a suite can opt for a single set of upsized carts. Population and residential development continues to grow in Nanaimo.

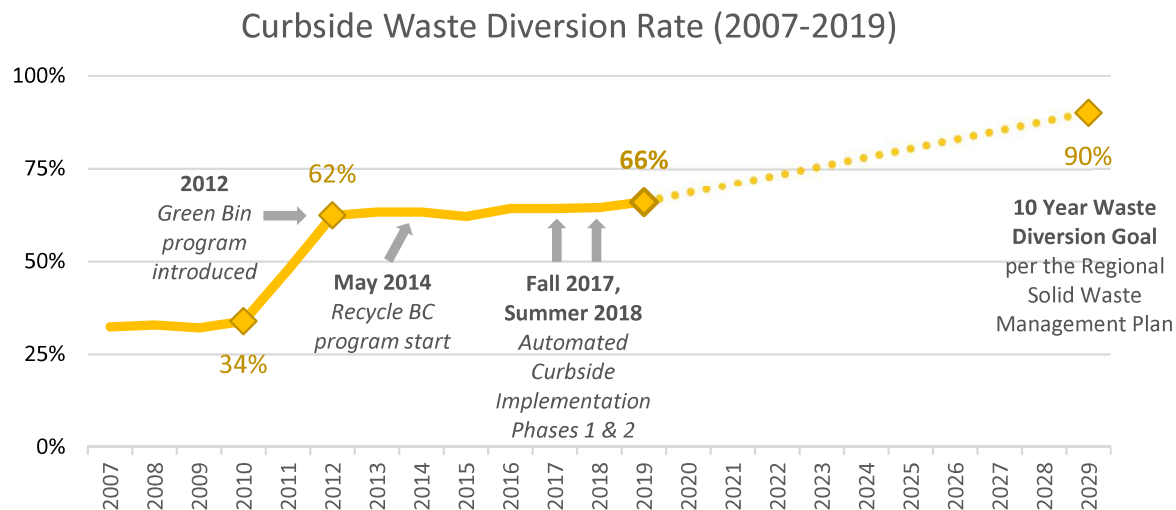
Table 1: Standard Cart Sizes per Household

Material	Standard	Upsize?	Downsize?
Landfill	120 litre	240 litre	×
Recycling	240 litre	360 litre	120 litre
Organics	120 litre	×	×

Overall Curbside Waste Collection Rates

Diversion from the landfill has been slowly rising since the implementation of the green bin program in 2012. As shown in Figure 1, the 2019 curbside waste diversion rate was at 66 percent, a slight increase from 65 percent in 2018 and 64 percent in 2017.

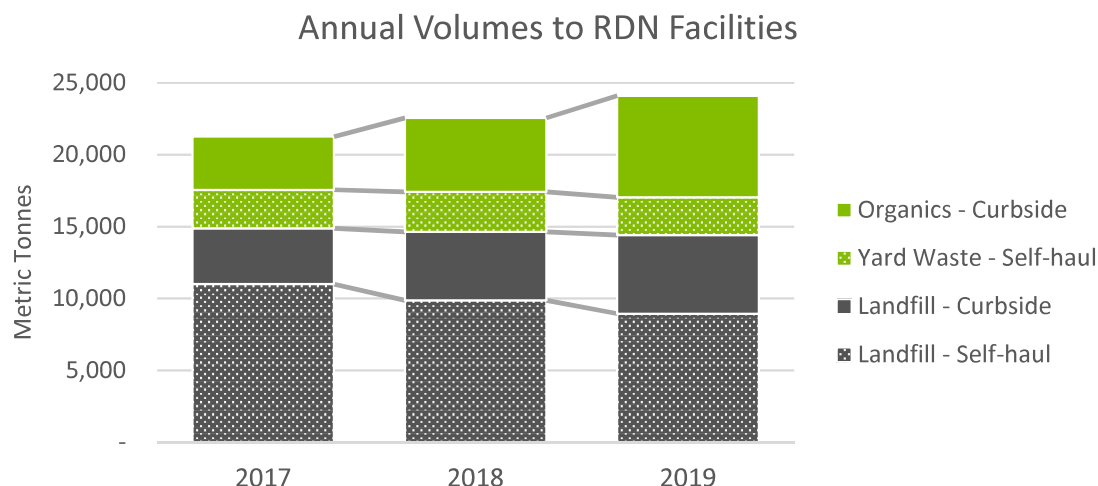
Figure 1: Curbside Waste Diversion Rates



The curbside MSW collection rates have been increased with the larger size of the organics and garbage waste cart volumes. While more garbage is being collected at curbside, there is an even larger increase in organics tonnages.

This trend can be understood through the comparison of curbside collection rates and residential self-haul trips to the Regional District of Nanaimo waste disposal facilities, as illustrated in Figure 2. Self-haul trips to the Regional Landfill have reduced since the implementation of the automated curbside service, with a seven percent decrease in 2018, and a further 10 percent decrease in 2019. This indicates City of Nanaimo households took fewer trips to dispose of MSW at the landfill, and avoided greenhouse gas emissions associated with these trips.

Figure 2: Annual Landfill and Organics Volumes to the Regional Solid Waste Facilities



Household Waste Collection Rates

The household MSW collection rates are shown in Table 2. Along with a total increase in curbside MSW collected, there has been an increase in curbside MSW collected per household. In 2019, the landfilled MSW collected per household was 191 kilograms, a 13 percent increase from the 2018 rate. With the introduction of light yard waste to organics, the 2019 organics waste collected per household was 247 kilograms, a near doubling of the 2017 rate. Recycling waste collected per household has been fairly consistent over the years, with a current rate of 126 kilograms per household.

Table 2: Curbside Waste Collection Rates

Kilograms per Household	2016	2017	2018	2019
Landfill	140	140	169	191
Recycling	118	118	126	126
Organics	133	133	182	247
<i>Total Curbside Collected</i>	<i>390</i>	<i>390</i>	<i>477</i>	<i>565</i>
Landfill Diversion Rate	64 %	64 %	65 %	66 %

As shown in Figure 3 and Figure 4, there can be significant monthly variation in curbside waste collection rates. There is a trend that organics and landfill waste peak in the spring and summer months, likely attributed to residents carrying out spring-cleaning in their yards and households. Recycling collection rates are more consistent on a monthly basis, although a slight spike in January is attributed to recyclables collected over the winter holidays.

Figure 3: Total Curbside Waste Collected

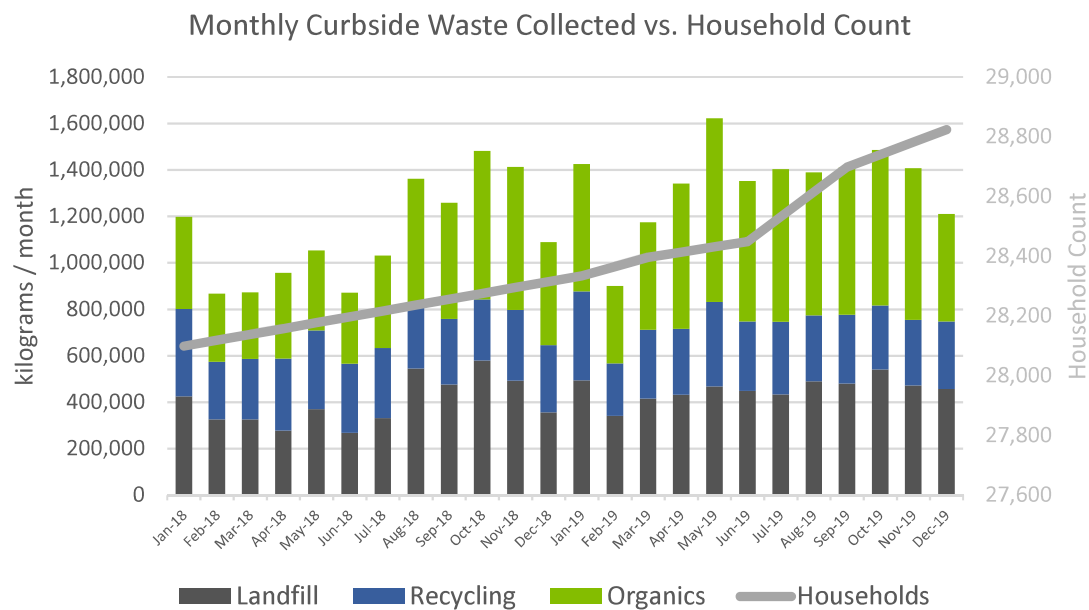
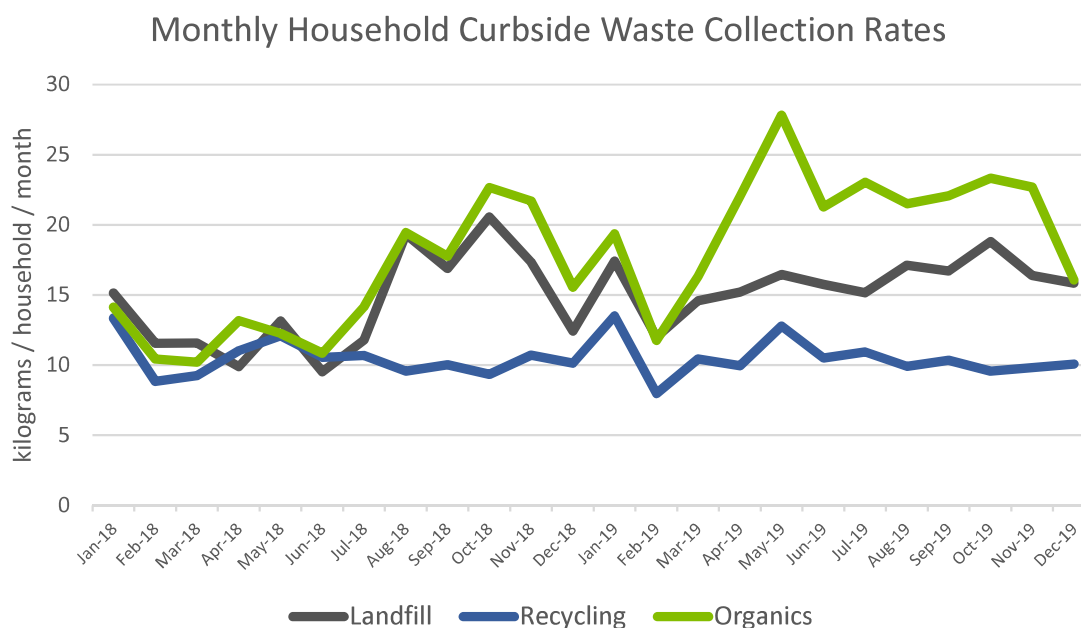


Figure 4: Curbside Waste Household Collection Rates



Provincial Comparison

Nanaimo's trends in curbside collection rates mirrors those in both the Regional District of Nanaimo and the Province of British Columbia. As reported by the Province, 2017 was the first year in which per capita disposal rates increased, since the tracking of MSW generation in 1990. As shown in Figure 5, the Regional District of Nanaimo consistently has one of the lowest waste disposal rates per capita in the Province. Overall, municipal solid waste trends within the Regional District indicate a general decline in per capita disposal rates since 1990. In line with the province-wide trend, there was a slight increase in the region's disposal rates from 2015-2017, as illustrated in Figure 6. As per the Province's observations, the increases in disposal rates could be attributed to a strong economy resulting in higher consumption and tourism, and a growth in construction and demolition activities.

Figure 5: Per Capita Disposal by Region¹

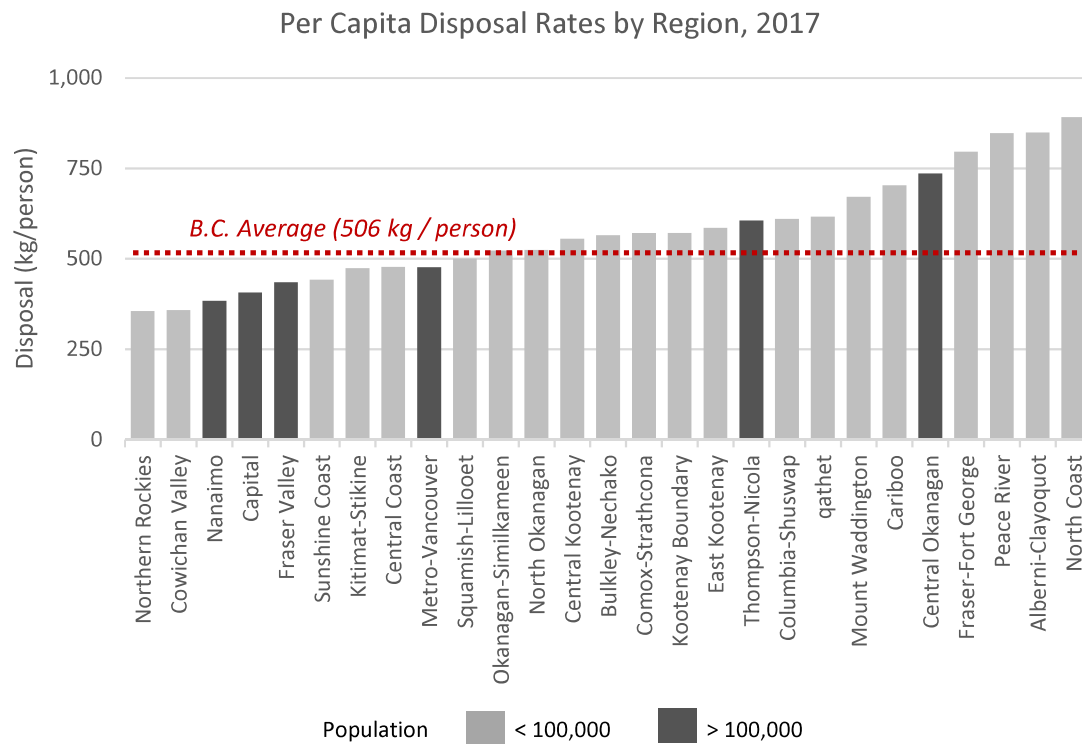
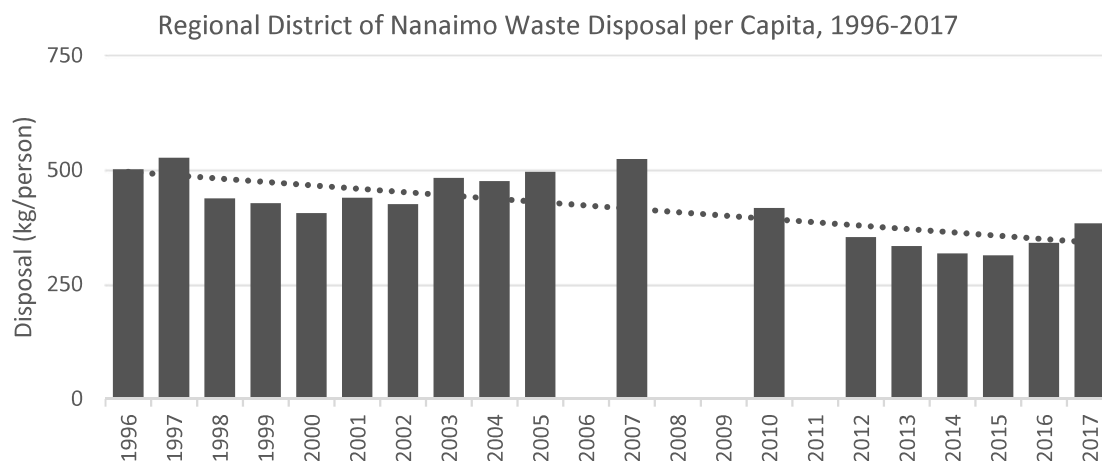


Figure 6: Regional Per Capita Disposal²



¹ Data Source for Figure 5 and Figure 6: [Environmental Reporting BC – Municipal Solid Waste Disposal in B.C. \(1990-2017\)](#).

² No data available for 2006, 2008, 2009 or 2011.

Public Education & Outreach

While the principal public education efforts were continuing with the introduction of the automated waste program, the following waste reduction, reuse and recycling programs were continued or implemented:

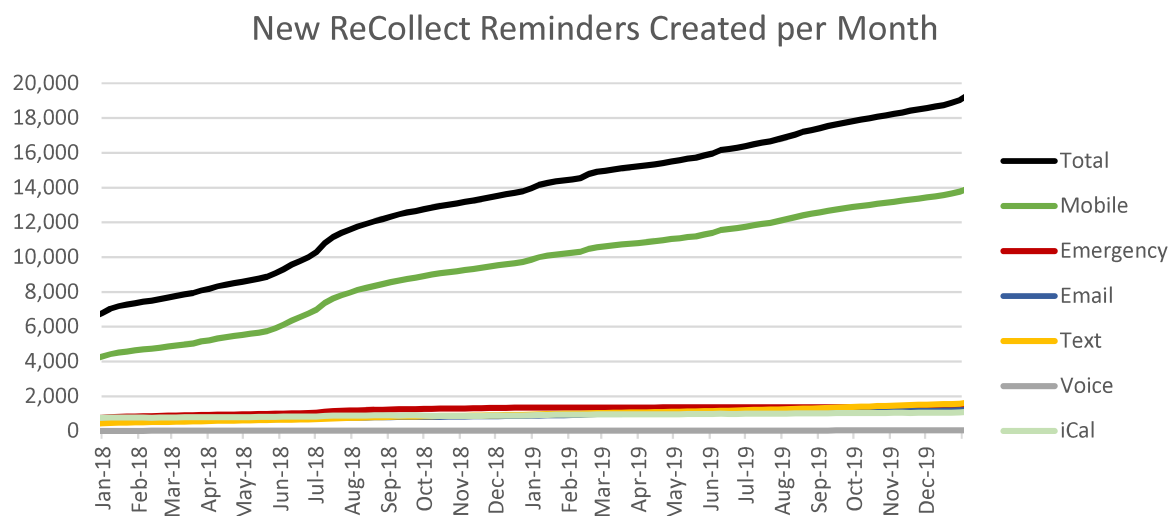
- ♻️ *Single-use Checkout Bags Consultation and Policy Development* - Consultation to develop new regulation of single-use checkout bags.
- ♻️ *Public Education* - Continuing education of public regarding waste reduction and proper diversion.
- ♻️ *Partners in Cleaner Community* – The continuation of a community clean-up program with local non-profit organizations participating in bi-annual events.
- ♻️ *Nanaimo Recycles Smartphone App and Website Widget* – Continued marketing of the app as a convenient source of curbside schedule and recycling directory.
- ♻️ *Trunk Sale* – the 3rd Annual Trunk Sale was held in July 2019, with around 100 vendors reselling items that may otherwise be disposed at the landfill.
- ♻️ *Reuse Rendezvous* – City of Nanaimo residents placed free household items at the end of their driveways to encourage reuse and redistribution of items with plenty of life remaining at their new homes.

Moving forward in 2020, the Sanitation unit aims to increase the curbside waste diversion rate and decrease the overall landfill waste disposal rates through the continuation of successful programs, like the Trunk Sale and promotion of the Nanaimo Recycles app, and implement new public education programs. The hiring of the Zero Waste Coordinator will increase capacity for citizen engagement programs to target waste reduction as well as increased diversion.

A waste composition study will be executed in 2020, and will provide updated data for which items to target in reduction of residential landfilled waste rates. The waste composition study will be complemented by a recycling and organics cart audit and education program, in which City staff will identify and assist households that require additional education to participate in the diversion programs.

Public education campaigns will continue to reference back to the Nanaimo Recycles app and ReCollect platform for curbside reminders, service alerts, curbside education campaigns, and the “What Goes Where” recycling and disposal directory. Shown in Figure 7, almost 20,000 residents have created a ReCollect curbside collection reminder. With this exceptional residential participation rate, utilization of the ReCollect platform provides significant reach in public education, which can be strengthened by traditional print media and radio, and social media platforms.

Figure 7: ReCollect Reminders



The majority of residents in Nanaimo live in single-family dwellings, as conveyed on in the recently released 2020 State of the Nanaimo Economy report. While the report speaks to the growth in development of multi-family buildings, the annual population increase ranging between seven to nine percent indicates a rise in residents utilizing the curbside collection service. This growth reinforces the need for waste diversion through Nanaimo’s curbside collection program.

In the coming years, the City will assist with the implementation of new programs included in the Regional District of Nanaimo’s Solid Waste Management Plan. In this capacity, the largest potential to target Nanaimo’s waste generation is to assist with the proposed Waste Source Separation program for multi-family buildings, and the institutional, commercial and industrial sectors. The Sanitation unit will also facilitate educating residents on the waste diversion opportunities in the Zero Waste Recycling program, and responsible disposal of unregulated hazardous waste through the Household Hazardous Waste program.



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