SPERLING HANSEN ASSOCIATES

NORTH COAST REGIONAL DISTRICT

# SOLID WASTE MANAGEMENT PLAN UPDATE

## DRAFT Technical Memorandum No. 1:

# SYSTEM OVERVIEW AND WASTE DIVERSION

**February 2022**

**Submitted by: Sperling Hansen Associates**

Revisions:

March 10, 2022 (NCRD Review) – TM1_220310 Final Draft

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**Glossary of Terms**

| | |
|---|---|
| BC | British Columbia |
| NCRD | North Coast Regional District (formerly Skeena-Queen Charlotte Regional District) |
| EA | Electoral Area |
| ENV | Ministry of Environment and Climate Change Strategy |
| EMA | Environmental Management Act (formerly Waste Management Act) |
| Guide | A Guide to Solid Waste Management Planning |
| HWR | Hazardous Waste Regulation |
| IL | Islands Landfill |
| ISWAC | Islands Solid Waste Advisory Committee |
| ISWM | Islands Solid Waste Management |
| MARR | Major Appliance Recycling Roundtable |
| MSWAC | Mainland Solid Waste Advisory Committee [now RRAC] |
| MSW | Municipal Solid Waste |
| PRL | Prince Rupert Landfill |
| PTAC | Public and Technical Advisory Committee |
| RRAC | Regional Recycling Advisory Committee |
| SWWG | Solid Waste Working Group |
| SHA | Sperling Hansen Associates |
| SWM | Solid Waste Management |
| SWMP | Solid Waste Management Plan |
| TM | Technical Memo |

# 1 INTRODUCTION

The North Coast Regional District (NCRD) is in the process of developing a new Solid Waste Management Plan (SWMP). The plan will guide the NCRD solid waste management services over the next five to ten years, providing direction on waste collection, waste disposal, recycling, waste reduction and service cost recovery. SWMPs are required for all regional districts in British Columbia under the Environmental Management Act (EMA). NCRDs first and only SWMP was adopted in 1996 under the former Skeena-Queen Charlotte Regional District and several intended initiatives have been implemented.

In 2016, the Ministry of Environment and Climate Change Strategy (ENV) published "A Guide to Solid Waste Management Planning" (the Guide) for local government to assist in completing SWMPs and updates that sets out the 5 R pollution prevention hierarchy, the solid waste management legislative requirements, provincial principles and targets, as well as considerations for small, rural regional districts. The Guide lays out a four-step process for the plan update including public consultation and provides templates for document development, the consultation report, advisory committee terms of reference and checklists. The NCRD has completed the first step of the process by initiating the planning process including establishment of a Public and Technical Advisory Committee (PTAC) who have now met twice, developed the consulting budget and compiled a list of topics to consider. Sperling Hansen Associates (SHA) was hired in November 2021 to assist with the SWMP update to its final submission to the ENV in 2023. The following tasks as outlined in SHA's proposal will be completed.

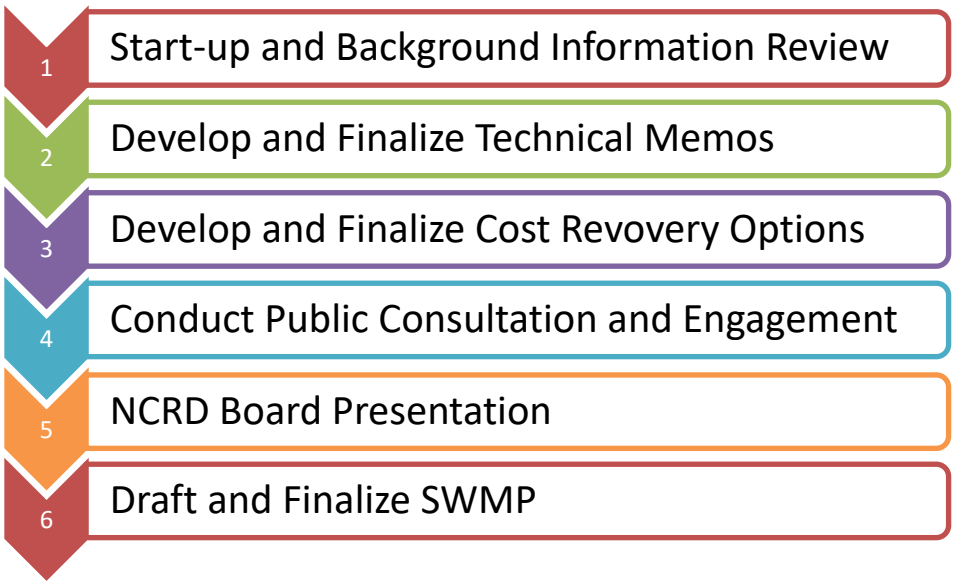


**Figure 1: SHA's Project Tasks**

Task 2 as listed above and shown illustrated below aligns with the Guide's Step 2: Set the Plan Direction and Step 3: Evaluate Options as follows:

Step 2:

- Identify principles, goals and targets
- Prepare background information
- Assess the current solid waste management system
- Consider trends affecting solid waste management
- Consult the public

Step 3:

- Develop potential strategies
- Assess the financial and administrative implications
- Consult the public and interested parties on the options.

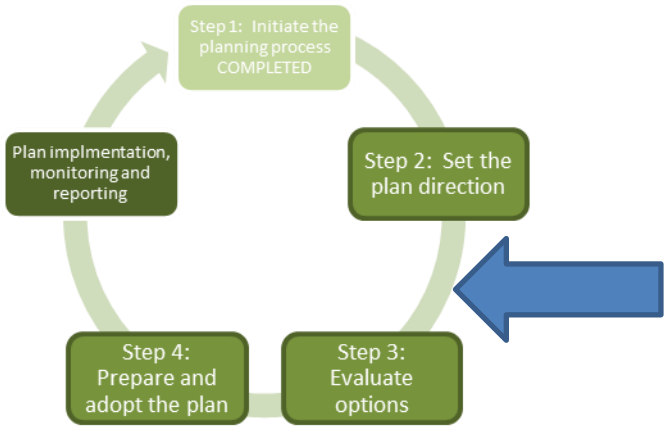


**Figure 2: Step 2 and 3 Task Orientation**

The Technical Memos (TM) are intended to be drafted for review by the NCRD staff and then presented to PTAC in four separate meetings. The topics for each TM are as follows:

Technical Memo 1: System Overview and Waste Diversion
Technical Memo 2: Residuals Management
Technical Memo 3: Cost Recovery
Technical Memo 4: Financial and Administrative Impacts of SWMP Initiatives.

# 2 CONTEXT AND SCOPE

Along with a comprehensive overview of the NCRD's current waste management system, this first TM provides the following:

- A review of the NCRD's waste management principles, goals and targets
- A detailed description of the Plan Area
- Based on information provided by NCRD staff, current diversion programs and the status of the1996 SWMP including the initiatives that will not be carried through to the updated SWMP
- The outcomes of Step 1 of the SWMP development process including formation of the Public and Technical Advisory Committee (PTAC) and the topics chosen to be reviewed
- Existing diversion strategies and tools
- Diversion opportunities for the NCRD to consider by sector (Residential, ICI, CRD).

At the outset of this project, it was a priority to gather as much information as possible from the last 25 years to establish a clear picture of the current solid waste management system including its successes, challenges and opportunities. This was completed using available Internet sources, conversations with the NCRD staff, and documents provided by the NCRD.

## 2.1 Principles, Goals and Targets

With amendments to the Waste Management Act (now Environmental Management Act) in 1989 the province required all Local Governments to develop a SWMP for approval by 1995 that would help British Columbia (BC) achieve a 50% reduction in municipal solid waste (MSW) disposal by the year 2000. As stated in the NCRD's approved 1996 SWMP, "Overall, the Stage One Report demonstrated that it would be very difficult for the Regional District to achieve the 50% reduction goal by 2000". Although an update or status review of the 1996 SWMP has not been undertaken to date, the NCRD has completed or implemented 96 of their 137 initiatives as described further below.

As outlined in the Guide, there have been many changes in the solid waste management sector over the last 25 years including the following:

- B.C.'s population is growing, meaning that more waste will be generated and require disposal; however, new disposal sites are difficult to establish, partly due to citizens concerned about the potential and demonstrated impacts of various means of disposal, as well as the increased requirements for proper handling that may also restrict certain sites
- British Columbians are increasingly conscious of the need to "reduce and reuse" and many communities have set the goal of reducing to zero waste through a variety of measures
- A growing number of product stewardship programs exist in B.C. to take responsibility for end-of-life product management

- Private sector innovation is playing a progressively significant role in the collection and management of waste
- “Waste” is increasingly being viewed as a resource; products that were once sent to landfills are now carefully collected for reuse, recycling and / or recovery
- New waste management and recycling technologies are creating opportunities, with associated job creation and economic benefits (ENV, 2016).

The 5R pollution prevention hierarchy is still front and center in the Guide which recognizes that although local governments have limited ability to influence product design and manufacturing and upstream environmental impacts, this type of planning can help to minimize downstream environmental impacts associated with the end of life of products.

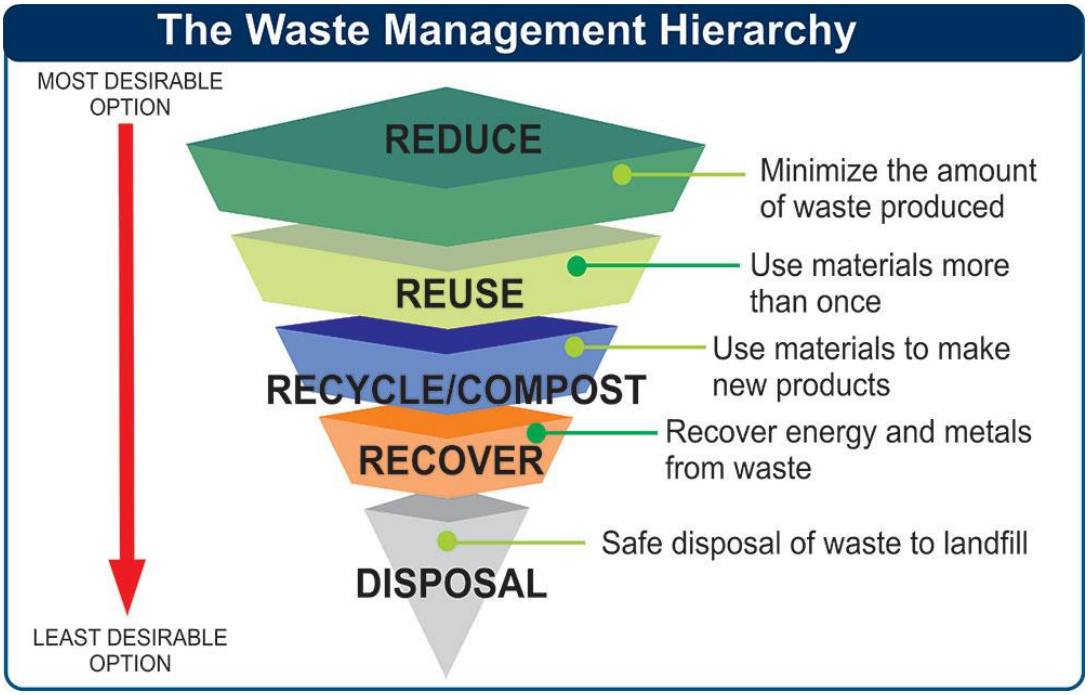


**Figure 3: Waste Management Hierarchy Diagram**

There has been a new emphasis on the circular economy with respect to waste management in both the province and the global environment. This approach can create jobs, promote innovation that provides a competitive advantage and help to protect people and the environment (ENV, 2016).

### 2.1.1 Guiding Principles

The Guide outlines eight guiding principles for regional districts to follow in developing and updating their SWMP and encourages regional districts to include additional locally relevant principles. The following is a list of the Province's eight guiding principles including illustrative descriptions.

**Promote zero waste approaches and support a circular economy**

This concept shifts thinking of waste as a residual to be disposed to waste as a resource that can be utilized in a closed loop system. Zero waste approaches seek to minimize waste generation at the outset and enable the use and reuse of materials.

**Promote the first 3 Rs (Reduce, Reuse, Recycle)**

Develop policies that focus on waste prevention programming and consider provincial and regional targets and objectives (e.g. single use plastics ban).

**Maximize beneficial use of waste materials and manage residuals appropriately**

Look to use technology and best practices to recover energy and reusable materials from the waste stream and continue to develop infrastructure investment.

**Support polluter and user-pay approaches and manage incentives to maximize behaviour outcomes**

Use market-based incentives, disposal restrictions on industry-stewarded products, zoning to support collection facilities, and support for reuse and remanufacturing businesses to maximize behaviour change and educate consumers and businesses to help foster further waste reduction, reuse and recycling. For example, user and tipping fees can be designed to provide incentives to increase diversion.

**Prevent organics and recyclables from going into the garbage wherever practical**

Maintain a system to prevent organics and recyclables from going into the garbage at the source or at the disposal facility through curbside or drop off collection programs aimed at producing a clean feedstock for higher beneficial reuse and new product development such as a Class A compost and waste derived fuel (plastic). Reinforce behaviour to reduce, reuse and recycle through disposal site restrictions and education.

**Collaborate with other regional districts wherever practical**

Collaboration on solid waste management to share markets, campaigns and programs will support efficient and effective overall management of commonly generated waste materials.

**Develop collaborative partnerships with interested parties to achieve regional targets set in plans**

Seek to develop or strengthen partnerships with interested parties to achieve regional targets to optimize successful outcomes such as with large waste generators and stewardship agencies. Encourage private sector innovation and investment towards achievement of targets.

**Level the playing field within regions for private and public solid waste management facilities**

Encourage consistent requirements at solid waste management facilities within a given region to drive sustainable and robust economic outcomes. A consistent set of criteria should be used to evaluate the waste management solutions proposed by private sector

### 2.1.2 Provincial and Local Targets

The ENV has established provincial solid waste management targets that set a direction for regional districts to follow and allow for performance measurement at the provincial level. These targets are adjusted from time to time to reflect current realities and public expectations and can be found on the ENV website. Setting local targets that are achievable, time-bound and demonstrate continuous improvement over time are recommended. It is important to note that the regional targets do not have to be aligned on the same timeline as the provincial targets which are as follows:

- Lower the MSW rate to 350 kg per person per year by 2020
- Have 75% of BC's population covered by organics disposal restrictions by 2020.

The NCRD reported their MSW disposal rate in 2019 to be 628 kg per person per year as shown below compared to the provincial average of 501 kg. The 2021 disposal quantity is reported to be 12,894 tonnes as shown in Table 1 below. With a 2021 population of 18,181 based on the 2021 Census (see Table 2) the current NCRD disposal rate is estimated to be **710 kg per person per year**.

This provincial indicator has shown a decrease in average disposal rate in the Province since 2012 of 64 kg per person per year. The Province has supported this reduction through a number of initiatives including CleanBC Plastics Action Plan, extended producer responsibility (EPR) programs, and funding for organics infrastructure and collection.

## Table 1: Disposed Quantities

| Location | Material Type | Source | Refined Source (SHA) | Refined Type (SHA) | Tonnes | Cubic Meters | Annual Waste Statistics |
|---|---|---|---|---|---|---|---|
| **Prince Rupert Landfill** | | | | | | | |
| | MSW | Rupert Disposal | | Res/ICI/CRD | 3,013 | | |
| | MSW | City | | Res/ICI/CRD | 57 | | |
| | Residential MSW | City Residents | | Res | 1,669 | | |
| | Commercial MSW | City Commercial | | ICI | 72 | | |
| | City MSW | City Public Works | | ICI/CRD | 47 | | |
| | MSW | Dist. Of Port Edward | | Res | 147 | | |
| | MSW | School District #52 | | ICI | 64 | | |
| | MSW | Other commercial | | ICI | 1,142 | | |
| | MSW | Cash Customers | | Res/ICI/CRD | 5,123 | | |
| | | | | **Total Mainland Refuse** | 11,334 | | |
| | | | | | | **2021 Tonnes** | 11,334 |
| | | | | | | **Mainland 2021 Census Population** | 13,510 |
| | | | | | | **2021 tonnes/per capita/year** | 0.84 |
| **Islands Landfill** | | | | | | | |
| | Residential MSW | Big Red | Moresby Island | Res | 404 | 2,021 | |
| | | NCRD Curbside Collection | Village of Queen Charlotte | Res | | | |
| | | | Skidegate Landing | Res | | | |
| | | | Tlell | Res | | | |
| | | | Village of Port Clements | Res | | | |
| | | | Village of Masset | Res | | | |
| | | | EA D | Res | | | |
| | Residential MSW | Old Massett Band (CC) | EA D | Res | 124 | 620 | |
| | Residential MSW | Masset TS (CC, Self Haul) | EA D/VoM | Res/ICI/CRD | 297 | 1,485 | |
| | Residential MSW | Skidegate TS (CC, Self Haul) | EA D/VoQC | Res/ICI/CRD | 488 | 2,442 | |
| | | Skidegate Band (CC) | EA D | Res | - | | |
| | Residential MSW | Landfill Self Haul | Haida Gwaii - as a whole | Res/ICI/CRD | 101 | 505 | |
| | Residential MSW | Sandspit TS | EA E | Res/ICI/CRD | 107 | 533 | |
| | MSW/ Mixed Load | Contractor | Haida Gwaii - as a whole | Res/ICI/CRD | 34 | 172 | |
| | Controlled Waste | Various | Haida Gwaii - as a whole | Res/ICI/CRD | 4 | 21 | |
| | | **Total Islands Refuse - not including C&D that was used to build berm** | | | 1,560 | 7,799 | |
| | | | | | | **2021 Tonnes** | 1,560 |
| | | | | | | **Islands 2021 Census Population** | 4,582 |
| | | | | | | **2021 tonnes/per capita/year** | 0.34 |
| | | | **Total for NCRD** | | | | |
| | | | | | | **2021 Tonnes** | 12,894 |
| | | | | | | **2021 Census Population** | 18,181 |
| | | | | | | **2021 tonnes/per capita/year** | 0.71 |

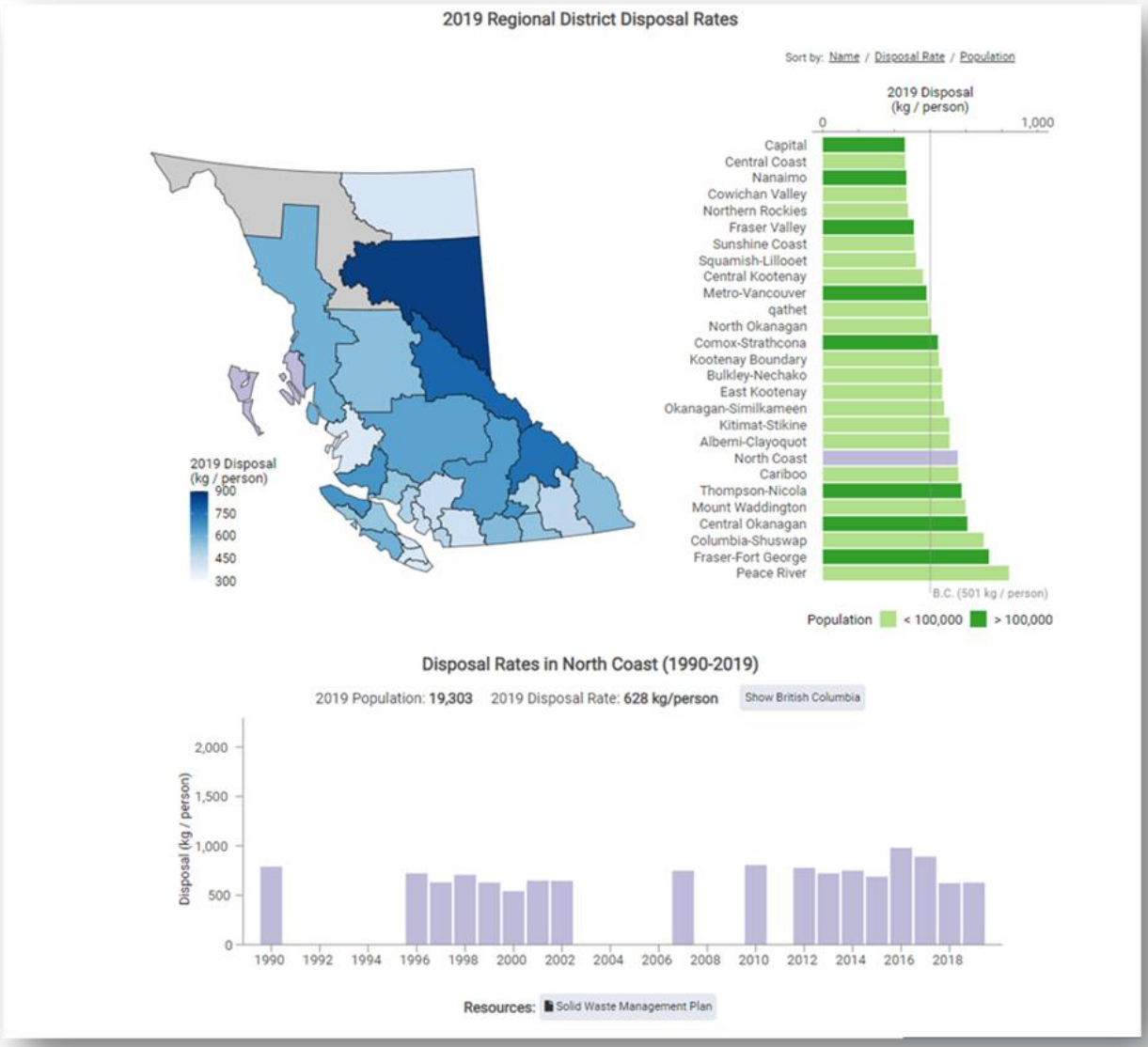


**Figure 4: Disposal Rate**

### 2.1.3 NCRD Guiding Principles and Objectives

In starting the SWMP update process (Step 1) and while developing the Request for Proposals the NCRD laid out the following objectives:

1. Implement this plan in a way that will minimize inconvenience to residents
2. Ensure that possible negative reactions to some plan policies are addressed during implementation

3. Ensure that the public and system users are participants in any modifications to this plan
4. Provide a framework to resolve disputes arising from implementation of the plan
5. Ensure that the entire system is funded to accomplish the goals of this plan
6. Focus the SWMP on:
    a) Improving the operational and financial efficiency of the NCRD waste management systems
    b) Assisting users to improve their participation in waste segregation and diversion programs
    c) Continuing to monitor solid waste management facilities and services
    d) Maintaining and improving relationships with large waste generators
    e) Maximizing compliance and efficiency with new and existing product stewardship programs
    f) Improving service delivery to rural communities
    g) Developing a strategy to reduce single use items
    h) Developing a food waste reduction strategy
    i) Improving recycling collection in the Mainland and Island Solid Waste Service Areas
    j) Developing options for compost collection and organics processing in both Service Areas
    k) Expanding the list of prohibited wastes
    l) Collecting household hazardous waste
    m) Enhancing and enforcing solid waste source control for the Industrial, Commercial and Institutional (ICI) sector
    n) Making recommendations respecting the acceptable cost of recycling ICI cardboard and printed paper and plastic.

The above list is not exhaustive and can be modified prior to development of the draft SWMP and presentation to the public during consultation.

## 2.2 Plan Area

The NCRD is divided into two Solid Waste Service Areas, the Islands Service Area and the Mainland Service Area (see Figure 5).

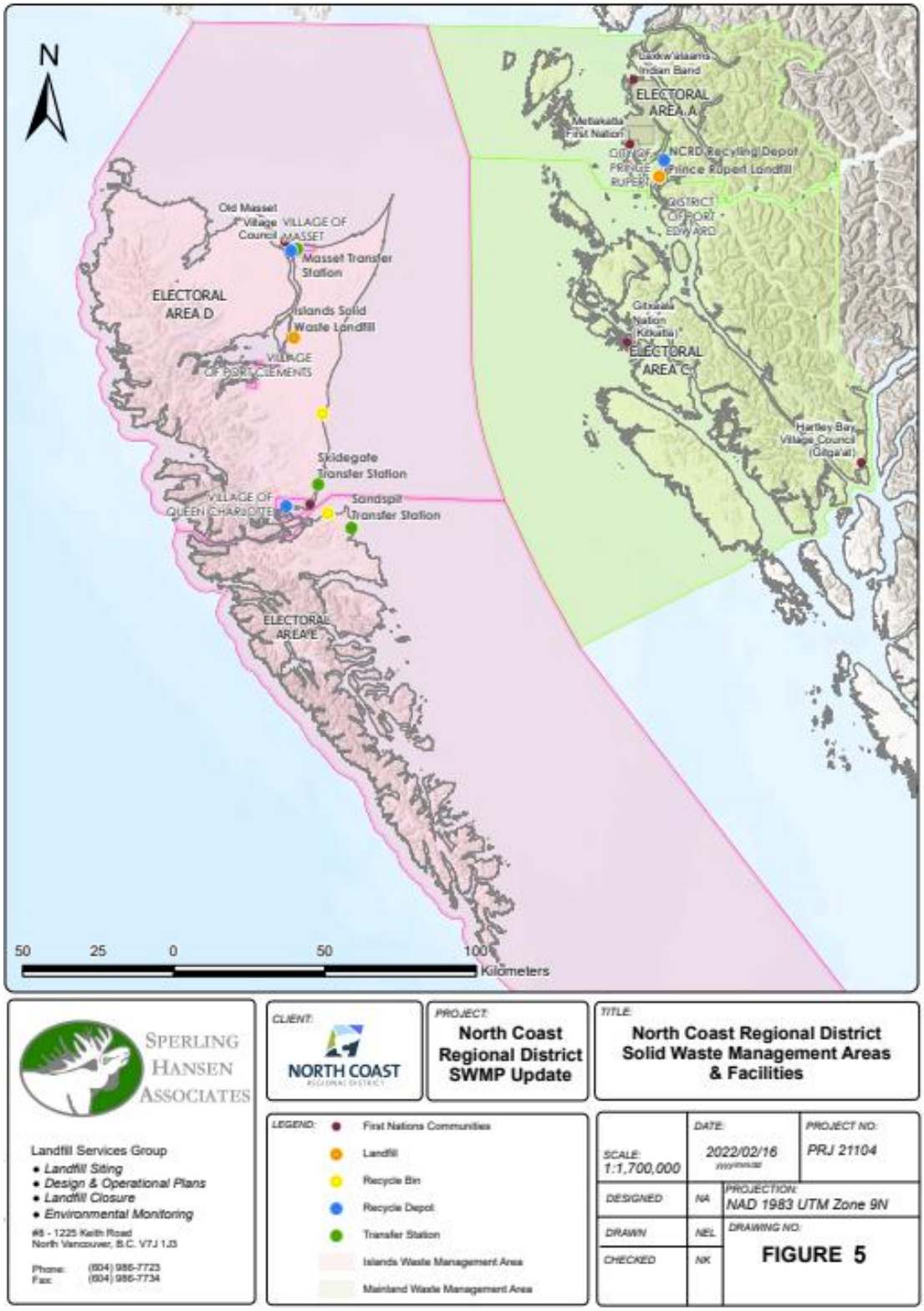


**Figure 5: NCRD Solid Waste System Overview**

The Islands Service Area has a combined population of approximately 4,790, with over half of the residents being members of the Haida Nation, and is managed by an entity referred to as Islands Solid Waste Management. There is a large seasonal population, with approximately 28% of dwellings being seasonally occupied. The 2021 Canada Census data has been

compiled in the following tables. As of this date, all 2021 data has not been updated by Census Canada. The populations and dwelling counts of these service areas are shown in Table 2 and 2A (First Nations Jurisdictions).

**Table 2 and 2A: Population and Dwelling Counts for Administrative Areas ***

| Jurisdiction | 2021 Census | Total Dwellings | Dwellings Occupied by Usual Residents |
|---|---|---|---|
| NCRD (Canada Census data) | 18,181 | 9,082 | 7,661 |
| | | | |
| Village of Masset | 838 | 518 | 399 |
| Village of Port Clements | 340 | 205 | 181 |
| Village of Queen Charlotte | 964 | 574 | 488 |
| Electoral Area D | 580 | 327 | 254 |
| Electoral Area E | 325 | 251 | 161 |
| First Nations (see Table 2A) | 1,535 | 572 | 491 |
| Islands (calculated data) | 4,582 | 2,447 | 1,974 |
| District of Port Edward | 470 | 207 | 181 |
| City of Prince Rupert | 12,300 | 5,747 | 5,072 |
| Electoral Area A | 45 | 46 | 29 |
| Electoral Area C | 31 | 72 | 17 |
| First Nations (see Table 2A) | 1,134 | 568 | 390 |
| Mainland (calculated data) | 13,510 | 6,433 | 5,508 |
| **Calculated Total** | **18,092** | **8,880** | **7,482** |

| First Nations Jurisdiction | 2021 Census | Total Dwellings | Dwellings Occupied by Usual Residents |
|---|---|---|---|
| Lax Kw'alaams 1 *EA-A | 627 | 316 | 216 |
| S1/2 Tsimpsean 2 (2016) [Metlaka | 88 | 50 | 30 |
| Kulkayu (Hartley Bay) 4 *EA-C | 58 | 33 | 17 |
| Kulkayu (Hartley Bay) 4A *EA-C | 66 | 26 | 21 |
| Dolphin Island 1 (Kitkatla) * EA-C | 295 | 143 | 106 |
| **Subtotal Mainland** | **1,134** | **568** | **390** |
| Masset 1 (Old Massett - Haida) * | 838 | 241 | 195 |
| Skidegate 1 *EA-D | 697 | 331 | 296 |
| **Subtotal Islands** | **1,535** | **572** | **491** |
| **Total** | **2,669** | **1,140** | **881** |

***2021 Census (Canada) – not yet updated completely**

The total population of the NCRD is estimated to be 18,181 by Census Canada.

The main industries in the NCRD are retail trade, health care and social assistance, construction, public administration, accommodation and food services, educational services, transportation warehousing, commercial fishing and manufacturing.

With respect to future economic growth in the region, SHA's NCRD Regional Recycling Depot Asset Management Plan, submitted in 2015, provided low, medium and high growth potential scenarios to predict the capacity of the existing facility as well as the upgrades required. The following is an updated list of the major construction projects currently planned or underway that may have possible impacts on population and waste generation in the region.

## Prince Rupert Port Authority, Gateway 2020 Vision

**New Container terminal:** *PRINCE RUPERT, BC, February 24, 2022 / CNW / – DP World, a global leader in logistics and provider of smart supply chain solutions, and the Prince Rupert Port Authority have entered into a two-year agreement to assess the feasibility of an innovative new container terminal project in Prince Rupert. The potential project would add up to 2 million twenty-foot equivalent units (TEUs) of annual capacity to the Port of Prince Rupert, significantly increasing Canadian trade capacity with critical Asia-Pacific markets, with considerable potential employment and economic impacts that will bolster the western Canadian economy.*

*The proposed terminal represents the continued advancement of the Prince Rupert Port Authority's container terminal master plan done in 2019, which outlined the potential for an additional container terminal, south of the existing Fairview Terminal. With this agreement, DP World and the Prince Rupert Port Authority will begin various studies on the proposed site, with a key focus on steps required to minimize environmental and community impact, improve the resilience of Canadian supply chains, and ensure the project's full integration into the Port's intermodal ecosystem.*

**Fairview Container Terminal Expansion:** *To maximize the opportunity for gateway growth, work is now underway on DP World Prince Rupert's Phase 2B Stage 1A (P2BS1A) project, with plans to deliver Phase 2B Stage 1B (P2BS1B) shortly thereafter. In combination, these two stages will yield an expanded sustainable practical capacity of 1.8M TEUs at Fairview Container Terminal by Q4 2023.*

**Photo 1: Fairview Container Terminal**

**Fairview-Ridley Connector Corridor ($109 M):** *This project currently under construction and expected to be completed in Q2 2022 will provide access improvements to the Ridley Island Terminal and is hoped to increase exports from the terminal, encourage future development in the industrial park, and encourage the construction of a Liquefied Natural Gas (LNG) facility.*

**South Kaien Island Import Logistics Project ($86.7 M):** *Metlakatla Development Corporation (MDC) and the Prince Rupert Port Authority (PRPA) are developing a logistics park on fee simple lands in close proximity to DP World's Fairview Container Terminal. Two parcels totaling 56 acres are available for long-term ground lease. The lands are intended to accommodate uses that complement the rapid growth of the container business in Prince Rupert and capitalize on strong market interest for both import and export logistics services such as transloading and warehousing. The logistics park is a critical component of PRPA's broader plan to develop an integrated intermodal ecosystem to support 4M+ TEUs of capacity by 2030.*

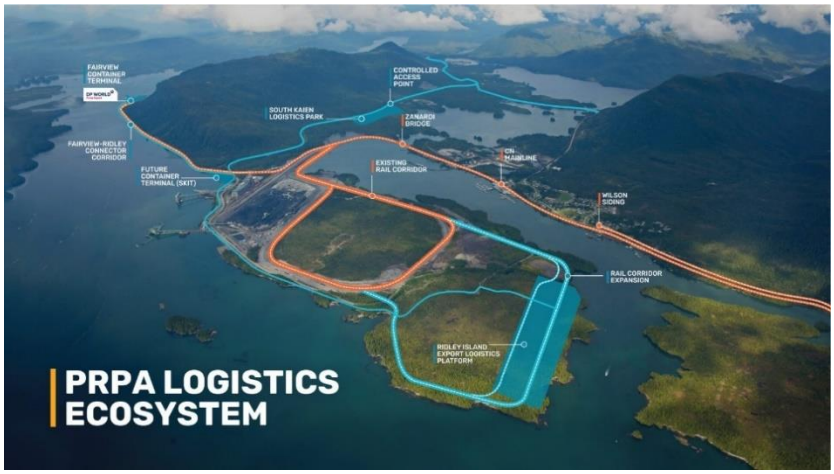


**Photo 2: South Kaien Island Import Logistics Project**

**Ridley Island Export Logistics Project (RIELP) ($250 M):** Located on the southern end of Ridley Island, the RIELP is designed to host integrated large-scale bulk transload facilities, integrated large-scale breakbulk facilities and an integrated off-dock container yard. Collectively, the platform is designed to support at least 400,000 twenty-foot equivalent units (TEUs) of export transload capacity annually, with the potential to increase capacity to 700,000 TEUs for bulk and breakbulk commodities in the future.

**Prince Rupert Marine Fuels Project:** *Currently under construction, the Wolverine Terminals marine fueling service project is a marine fuel delivery service for the Port of Prince Rupert that will enable cargo vessels anchored or berthed in the Port to fuel locally.*

## Port Edward LNG Terminal

*Port Edward LNG is a British Columbia company proposing to build and operate a small-scale Liquified Natural Gas facility on 37 acres five km east of Port Edward, near Prince Rupert on the*

*traditional territories of the Tsimshian communities. Port Edward LNG would be just over one-percent of the size of a large LNG project, liquefying as for export in small quantities via conventional container ship. In September 2021 they received their BC Oil and Gas Commission facilities permit to start preparing the site.*

## 2.3 1996 SWMP

The current Solid Waste Management Plan was approved and initiated in 1996 and has not been updated nor amended. Out of 137 initiatives in the original SWMP, a status review recently conducted with NCRD staff indicates that 96 are complete and/or underway to date. Appendix A contains a summary of the initiatives and is colour coded as follows:

| |
|---|
| Initiative Complete and Carried Forward |
| Initiative in Progress and Carried Forward |
| Initiative not Complete and Carried Forward |
| Initiative not Complete and Not Carried Forward |

The initiatives not complete and to be assessed to carry forward include the following:

- Contract a Mainland Waste Reduction Coordinator to organize regular education programs for schools, local government and other interested parties [keep initiative active].
- All Mainland areas participating in the waste reduction service area will participate in the funding of education programs with amounts limited by bylaws [keep initiative active].
- Encourage initiatives for commercial and backyard composting operations by having the education coordinator provide information on composter design and operation and any existing operations that will accept compostable materials – [keep initiative active for both Residential and ICI Sector]
- Encourage backyard composting and investigate funding options (anecdotally, a significant number of backyard composters have shown up in the landfills/transfer stations on the Island) – [keep initiative active for food waste diversion]
- Encourage Prince Rupert to purchase a tub grinder that could process wood waste and demolition waste to be suitable for cover materials (beneficial reuse/recycling) – [currently relies on open burning 2 – 3 times per year – keep initiative active for assessment of wood chip use at Facility]
- Consider transfer of the Operational Certificate for the Prince Rupert Landfill to the NCRD - [currently not under discussion however keep initiative active]
- A permanent Solid Waste Advisory Committee be established with representation from EAs D and E, Masset, Queen Charlotte, Port Clements, Old Massett, Skidegate and representatives from environmental organizations to be responsible for administering the Islands Solid Waste System [keep initiative active]

- When sufficient problem waste materials have been accumulated funds may be withdrawn from the Recycling Fund (not established) to pay for the handling and shipping of recyclable materials – [keep initiative active and label fund 'Accumulated Waste Management Fund' or other name as appropriate].

Section 4 outlines the recommended initiatives to carry forward in more detail.

## 2.4 Advisory Committees

The NCRD has used and uses advisory committees to assist with governance of the solid waste management system and special projects as outlined below.

**Regional Recycling Advisory Committee**. The Mainland Solid Waste Advisory Committee (MSWAC) was established in response to a 1996 SWMP recommendation to form a waste management committee to administer the Mainland solid waste programs. MSWAC became the Regional Recycling Advisory Committee (RRAC), established under Bylaw No. 588 in 2014. The committee is composed of membership from the City of Prince Rupert, the District of Port Edward, and Electoral Areas A or C. Appointments to the committee include representation from the NCRD Board for Electoral Area A or C, local environmental or recycling groups, and First Nations communities or organizations within the Mainland service area.

The committee meets quarterly for regular meetings, with additional and special committee meetings held as necessary. All meetings are open to the public. The RRAC has paused meetings for the duration of the SWMP update, The Public Technical Advisory Committee (PTAC) will assist the NCRD with the new plan development. Quarterly meetings will resume following the completion of the new SWMP and the dissolution of the PTAC.

**Islands Solid Waste Advisory Committee.** The Islands Solid Waste Advisory Committee was recommended in the 1996 SWMP in parallel to the recommendation for MSWAC. This committee was operational for a number of years, however, has not been operational for over a decade. Solid waste on the Islands is currently managed under the entity Islands Solid Waste Management (ISWM).

**Public and Technical Advisory Committee.** The NCRD initiated the process to form the PTAC in 2020. Letters of invitation were sent to Interested Parties, including all First Nations groups within the NCRD. Two meetings have been held to date, the first in July 2021, and the second in September 2021. These meetings provided an introduction to the committee, and review of the RFP for the SWMP. Meetings are intended to be held electronically on a bi-monthly basis, or at the call of the Chair. Members of the PTAC are included in Table 3. At the time of writing this memo, the PTAC is seeking another member to be appointed. A chair and vice chair have not yet been elected.

**Table 3: PTAC Membership in the NCRD**

| PTAC Membership and Organization | |
|---|---|
| **Name** | **Organization** |
| Hans Seideman, Manager of Building Services | City of Prince Rupert |

| PTAC Membership and Organization | |
|---|---|
| **Name** | **Organization** |
| Tanya Ostrom, Operations Manager | City of Prince Rupert |
| Danielle Myles-Wilson, CAO | District of Port Edward |
| Bret Johnston, Councillor | Village of Masset |
| Lisa Pineault, Councilor | Village of Port Clements |
| Kazamir Falconbridge | Village of Port Clements |
| Tracy Hageman, Councilor | Skidegate Band Council |
| Patrika McEvoy, Councilor | Old Massett Village Council |
| Stephen Grosse, Representative | Council of the Haida Nation |
| Rina Gemeinhardt, Referral Coordinator | Kitsumkalum Indian Band |
| Leonard Cook, EPO | Ministry of E & CC |
| Mike Richardson, Owner | Big Red Enterprises |
| Megan Haley, Environmental Scientist (not active) | Sperling Hansen Associates |
| Des Nobels, Director | North Coast Regional District |
| Evan Putterill, Director | North Coast Regional District |
| Ed Landrath (recent) | Community Member |
| Erin Mutrie (recent) | Metlakatla First Nation |
| Christina Jewell (recent) | Dirt Nerd Soil Company |
| Emily Peer-Groves (recent) | Dirt Nerd Soil Company |
| Daniel Fish, CAO | North Coast Regional District |
| Tim Des Champ, Superintendent of Waste Management | North Coast Regional District |
| Rob Kidd, Manager, Islands Solid Waste | North Coast Regional District |

In the presentation material from the July 2021 PTAC meeting, a number of focus areas were identified as in-scope with NCRD Board and Administration support. The following waste focus areas will be outlined in detail in Section 4 and subsequent Technical Memos:

- Improve the operational efficiency of the NCRD waste management systems.
- Assist users and improve their participation in waste segregation and diversion programs.
- Continue monitoring solid waste management facilities and services.
- Maximize compliance with new and existing stewardship programs.
- Improve service delivery to rural communities.
- Optimize efficiencies by increasing diversion rates for residential materials or commercial generators that are below average.
- Improve and monitor Stewardship program compliance.
- Improve collection of recycling and waste in underserved communities.
- Improve transportation of materials between service areas.
- Develop diversion strategies.
- Develop cost recovery models.

## 2.5 Roles and Responsibilities.

This section describes the entities that have a role in waste reduction and recycling in the NCRD. The NCRD consists of four Electoral Areas (A, C, D, and E), the City of Prince Rupert, District of Port Edward, Village of Masset, Village of Port Clements, Village of Queen Charlotte, several unincorporated communities and First Nations communities. These local governments are interested parties that work with the NCRD within the regional SWM system. In addition, the general public, environmental interest groups, the Port Authority and other senior government agencies, businesses representing tourism, waste management and retail, and industries representing forestry, fishing, mining and manufacturing also have a role within the system besides just using the provided recycling and disposal facilities. For example, from the 2015 Haida Gwaii Marine Plan, several concerns regarding waste management were identified, including the disposal of sewage and wastewater and the presence of garbage litter impacting marine ecosystems. Input and feedback on SWMP initiatives from a broad spectrum of interested parties is essential to development of a robust, sustainable and efficient SWM system.

### 2.5.1 North Coast Regional District

As seen in the PTAC member list above, the NCRD has put together a representation of the interested parties in the region to assist with SWMP development. The NCRD's role in creating an acceptable SWMP is to ensure interested parties are provided sufficient opportunity to submit feedback and engage on any issues of concern they may have.

### 2.5.2 Interested Parties

With the intention of ensuring a comprehensive list of interested parties are made aware of the SWMP update process and potential initiatives that may impact them, SHA has compiled the following list. This list is not exhaustive and will be refined as the process moves forward so as important organizations and agencies are not missed.

**Table 4: Interested Parties in the NCRD**

| Stakeholder Groups in the NCRD | |
|---|---|
| First Nations | Municipalities |
| • Gitga'at First Nation<br>• Gitxaala First Nation<br>• Kitselas First Nation<br>• Kitsumkalum First Nations<br>• Lax Kw'alaams Band<br>• Metlakatla First Nation<br>• Old Massett Village Council<br>• Skidegate Band Council<br>• Council of the Haida Nation | • City of Prince Rupert<br>• District of Port Edward<br>• Village of Queen Charlotte<br>• Village of Port Clements<br>• Village of Masset |
| Commercial Haulers | Industry and Government Agencies |
| • Big Red Enterprises<br>• Clearbrook Trucking<br>• Jims Mowing<br>• Skeena Waste and Recycling<br>• Rupert Disposal<br>• Tickers Hauling | • Port of Prince Rupert<br>• Prince Rupert Grain<br>• Ridley Terminals<br>• DP World Prince Rupert<br>• BC Ferries<br>• BC Government Ministries |
| | Interest Groups |
| | • Prince Rupert Environmental Society<br>• Dirt Nerd Soil Company |
| | Institutions |
| | • School District 50 and 52<br>• Northern Health Facilities |

A contact list will be managed throughout the SWMP update process.

# 3 SYSTEM OVERVIEW

Location plays an integral part in regional solid waste management, particularly in understanding the dominant solid waste disposal patterns of residents, businesses, and other contributing entities. For the purpose of this TM1, the two distinct service areas and waste facilities within the NCRD are divided and presented as Mainland and Islands, both having an NCRD manager responsible for all activities, programs and facilities. The landfill sites in the NCRD consist of two options for residents; one located on the mainland and one on Graham Island of the archipelago of Haida Gwaii. The mainland facility, Prince Rupert Landfill (PRL), primarily services the residents of the City of Prince Rupert, the District of Port Edward, and constituents of Electoral Areas A (Dodge Cove, Skeena River north), and C (Porcher Island, Kaien Island, Skeena River south). The Islands Landfill (IL) services the residents of the Villages of Masset, Queen Charlotte, Port Clements, and Electoral Areas D (rural Graham Island), and E (Sandspit, Moresby Island).).

There are four transfer stations, which also serve as recycle drop-off depots, within the Islands and Mainland service areas including Masset Transfer Station, Skidegate Transfer Station, Sandspit Transfer Station and Lax Kw'alaams Band Transfer Station.

The Mainland NCRD recycling facility is located in Prince Rupert and provides drop off and materials consolidation services to the region as a whole. As outlined in the facility Asset Management Plan (SHA, 2015), and recently reviewed with NCRD staff, the facility currently processes a broad range of recyclable materials including beverage containers, packaging and printed paper, ICI cardboard, electronics, white goods, batteries, paint, small appliances, lights, as described further in Section 3.3.

## 3.1 Waste Composition Studies

Waste composition, or waste characterization, studies are invaluable tools for SWM planning. Understanding the constituents of the waste stream and their quantities is key for initiating or improving recycling activities and organics facilities, curbside collection programs, improving diversion awareness, and overall SWM effectiveness. Waste composition study data can improve the quality of a SWMP and further refine its goals and objectives. Waste composition studies can also identify prohibited waste streams which can increase risk to facility users and staff.

There are three ways to undertake a waste composition study, with either quantitative, qualitative, or hybrid methodologies. Quantitative methods use raw data in the form of waste sorting, which produces waste categories, tonnages, and counts. Qualitative studies consist of field observations and interviews, which provides more holistic data outside of a designated sorting period. As described by Lamm (2019), a hybrid approach combining both quantitative and qualitative data can often yield a more reliable representation of waste composition than either methodology by itself.

Two waste composition studies have been completed for the Islands solid waste area but not the Mainland service area to date. The first, by Laurie Gallant in was completed in 2007 and the second in 2019 by SHA's Nicholas Lamm. These studies were conducted to assess the waste

stream of the Islands area specifically, including Graham and Moresby Island, and surrounding island communities.

Gallant's study takes a hybrid approach, using quantitative data from volumetric reports, closure reports, recycling volumes, stewardship program annual reports, and Census data, as well as qualitative data from ISWAC, contractors, municipalities, staff feedback, and interviews with product stewards. Lamm's (2019) study consists of a review of other composition studies in different regional districts of BC, and ultimately extrapolated data from Gallant's (2007) study with Lamm's qualitative information. Both studies incorporate a hybrid approach to examining waste composition.

Gallant's study concludes that the largest constituent of Island waste in 2007 was paper materials at 935 tonnes (25% of total) and organics at 748 tonnes (20% of total). Following these two categories are plastics (374 tonnes, 10%), composites (8%), CRD waste (262 tonnes, 7%), and textiles (262 tonnes, 7%). Remaining categories include but are not limited to glass, metal, wood and wood products, and rubber.

In comparison, Lamm found the largest constituent of Islands solid waste was compostable organics (25%), followed by plastics (14%), paper and cardboard (13%), and CRD (10%). Remaining categories include but are not limited to non-compostable organics, textiles, bulky waste, metals, household hygiene, and electronics.


Typical MSW load tipped at the IL (Lamm Photo)

Table 5 below shows the waste composition for the Islands waste area in 2018, according to Lamm's report.

**Table 5: Lamm (2019) Waste Characterization for Islands Solid Waste Area**

| Regional District or Region | RDOS (2008) | TNRD (2011) | RDNO (2012) | CSRD (2013) | SCRD (2015) | Metro Vanc. (2016) | RDKS (2017) | RDEK (2018) | Haida Gwaii (Gallant, 2007) | Haida Gwaii (Lamm, 2019) |
|---|---|---|---|---|---|---|---|---|---|---|
| Category | | | | | | | | | | |
| Paper and Paperboard | 10% | 15% | 15% | 16% | 9% | 19% | 20% | 13% | 25% | **13%** |
| Plastics | 12% | 11% | 14% | 18% | 17% | 19% | 15% | 14% | 10% | **14%** |
| Glass | 1% | 2% | 3% | 2% | 2% | 3% | 3% | 3% | 6% | **3%** |
| Metals | 7% | 4% | 7% | 6% | 2% | 3% | 3% | 5% | 4% | **4%** |
| Compostable Organics | 40% | 44% | 28% | 34% | 18% | 27% | 20% | 30% | 20% | **25%** |
| Non-compostable Organics | 0% | 1% | 10% | 4% | 0% | 11% | 12% | 8% | 6% | **8%** |
| Construction - Demolition | 10% | 12% | 7% | 3% | 25% | 9% | 4% | 11% | 7% | **10%** |
| Textiles | 4% | 4% | 0% | 0% | 9% | | 0% | 5% | 7% | **5%** |
| Household Hygiene | 0% | | 7% | 4% | 2% | 6% | 14% | 5% | | **5%** |
| Household Hazardous Waste | 1% | 2% | 4% | 6% | 0% | 1% | 5% | 2% | 1% | **2%** |
| Electronics | 1% | 2% | 3% | 5% | 6% | 2% | 1% | 2% | | **2%** |
| Bulky Waste | 4% | | 0% | 1% | 8% | 0% | 2% | 2% | | **6%** |
| Fines / Other | 10% | 5% | 2% | 1% | 4% | 1% | 2% | 2% | 14% | **3%** |

When considering a waste study and reviewing composition results, it is important to keep in mind the variables at work and how they translate to the observed composition. Factors that affect the composition of the waste stream include:

- Available curbside collection programs
- Access to EPR programs
- Cultural habits and values (backyard composting and waste burning)
- Geography (island and remote communities)
- Transportation limitations (ferries)
- Seasonal variation (tourism and spring clean-ups)
- Convenience of disposal versus diversion (curbside vs drop-off)
- Diversion programs at disposal sites: yard waste, wood, scrap metal, etc.
- Bag/can limits
- Economic incentives (user pay vs taxation and variable tipping fees)
- Disposal bans and enforcement of such
- Education and communication programs.

It is recommended by SHA that the NCRD consider conducting a quantitative or hybrid waste composition study at all disposal sites in the region based on the standard practices developed by the Province and stewardship agencies and performed regularly by other regional districts in cooperation with the stewardship agencies of BC (BC Recycles). BC Recycles will work cooperatively with local governments to assess the amount of their products still being disposed in various regions in BC.

The quantities of specific waste types still in the NCRD waste stream can be further shown as follows in Table 6 based on the Islands' study. As stated above, this should be further refined with a new quantitative study at the Prince Rupert Landfill as well.

**Table 6: Waste Composition Quantities Based on Lamm Study and 2021 Disposal Tonnage**

| Category | Percent | Tonnes |
|---|---|---|
| Paper & Paperboard | 13% | 1,676.25 |
| Plastics | 14% | 1,805.19 |
| Glass | 3% | 386.83 |
| Metals | 4% | 515.77 |
| Compostable Organics | 25% | 3,223.55 |
| Non-Compostable Organics | 8% | 1,031.54 |
| Construction & Demolition | 10% | 1,289.42 |
| Textiles | 5% | 644.71 |
| Household Hygiene | 5% | 644.71 |
| HHW | 2% | 257.88 |
| Electronics | 2% | 257.88 |
| Bulky Waste | 6% | 773.65 |
| Fines/Other | 3% | 386.83 |
| | 100% | 12,894.20 |

The above quantities represent the available materials for diversion in the waste stream. The quantities that can actually and practically be collected and diverted are quite different. Assessments are made on the practical percentage able to be diverted through drop off, curbside collection and reuse/reduction programs for planning purposes. Section 4 describes some of the opportunities to get at more of the above listed materials.

## 3.2 Waste Diversion Incentives

Controlling disposal of waste at the 'end of the pipe' or disposal site is a common way to divert materials from disposal. The NCRD and the City of Prince Rupert restrict disposal of a large number of products and materials at their facilities resulting in significant diversion from disposal.

The City of Prince Rupert stipulates materials that are not accepted for disposal at their Landfill, including the following:

- Batteries (Vehicle and Household)
- Fluorescent Compact Bulb and Tube Lights
- Solvents, Household & Marine Paint, Pesticides, Gasoline & Containers

- Home Electronics Including: Computers, Monitors, TV's, Printers
- Small Home Appliances Including: Microwaves, Vacuums, Water Coolers, Dehumidifiers, Oil Heaters
- White Goods (Major Home Appliances) Including: Fridges, Freezers, Ovens, Ranges, Washing Machines, Dryers, Dishwashers, Air Conditioners, Furnaces, Hot Water Tanks
- Tires
- Used Outdoor Power Equipment Including: Lawnmowers, Snow Blowers, Power Saws, Weed Trimmers, Pressure Washers
- Creosote Treated Wood & Railway Ties
- Cans of paint and spray paint.

Items listed as Recyclable in the Islands Solid Waste Management Regulation, Fees & Charges Bylaw include the following:

- Appliances
- Small Appliances
- Empty 171-liter drums
- Empty tanks over 171 liters
- Propane tanks
- Tires
- Vehicle hulks (not accepted at Transfer Stations)
- Lead acid batteries
- Paint products
- Waste oil/filters/containers
- Sorted Metals.

There are no variable tipping fees or stipulation of fines or surcharges for unsorted loads or loads containing the above materials at this time. It is common to add additional items to the restrictions or prohibited list when viable options become available such as organics including yard waste, wood waste and food scraps, concrete, textiles, mattresses/box-springs, glass, asphalt shingles, drywall, and items for reuse such as small appliances, toys and furniture.

The NCRD and Prince Rupert regularly examine and adjust the fees associated with bringing waste materials to their facilities to both collect adequate revenue and control what is disposed to meet environmental regulations and conserve landfill capacity. Fees are set that provide incentive to sort loads prior to entering a facility, take the materials elsewhere for recycling or proper disposal, or put materials in the proper place at the site. For example, the General Refuse fee at the PRL is $175/tonne and the fee for asphalt, concrete, metal, rock, clean wood and yard waste is $17.10/tonne. A disincentive at the PRL is their fee for white goods and excess cardboard: $660 per load. These items are accepted at the Regional Recycling Depot in Prince Rupert at no cost so the fee encourages diversion to this facility where materials are managed under a Stewardship Program.

Besides informing their customers of the materials the NCRD's Regional Recycling Depot accepts, Prince Rupert's landfill brochure also provides alternative locations for diverting other prohibited materials such as the following:

- Used outdoor power equipment - Seasport Marina in Prince Rupert
- Used oil and antifreeze - to a local auto repair shop
- Propane cylinders - Coastal Propane on George Hills Way.

Both Landfills include a list of prohibited wastes within their respective waste management bylaws. These lists are summarized in Table 7.

**Table 7: Prohibited Wastes at Landfills within the NCRD**

| NCRD Islands Landfill | Prince Rupert Landfill |
|---|---|
| Liquids<br><br>Slurry (except as permitted)<br><br>Empty steel and plastic drums, unless they are crushed, shredded or similarly reduced in volume to the maximum practical extent<br><br>Ignitable waste<br><br>Radioactive waste<br><br>Special waste (except as permitted)<br><br>Refuse that is on fire or smouldering<br><br>Explosives<br><br>Industrial chemical waste<br><br>Lead acid batteries (except as permitted)<br><br>Small tires or large tires mounted on rims<br><br>Ozone depleting substances except as permitted herein. | Hazardous (including pathogenic and radioactive wastes)<br><br>"Hazardous Wastes" as defined by the Environmental Management Act (BC)<br><br>Any substance prescribed as "waste" by regulation under the Environmental Management Act<br><br>Non-sterilized biomedical waste<br><br>Explosive substances<br><br>Chemicals or other materials which may create hazardous working conditions<br><br>Inflammable materials<br><br>Ashes or other materials hot enough to start combustion<br><br>Waste oil, petroleum by-products, used oil filters or equipment lubricant filters.<br><br>Contaminated water waste<br><br>All forms of excrement excluding minor amounts of domestic pet waste.<br><br>Tanks, barrels, drums, pails, and other large liquid containers that are not empty, unless authorised by the Director of Operations. |

| NCRD Islands Landfill | Prince Rupert Landfill |
|---|---|
| | Creosote painted/pressure treated materials<br><br>Contaminated soils unacceptable to the Director of Operations<br><br>Tires<br><br>Commercial loads of dry cell batteries<br><br>Corrugated cardboard from commercial sources<br><br>White goods<br><br>Any other material deemed by the Director of Operations of the Medical Health Officer as hazardous, unacceptable, or unsuitable for disposal at the Landfill Site.<br><br>Some prohibited materials may be accepted in small quantities for recycling<br><br>Wire rope |

As shown above, waste diversion can be managed through controlling when, what and how waste materials are brought to the disposal facilities. The following section provides more details on the waste management facilities in the NCRD.

## 3.3 Facilities

Brief descriptions of the waste management facilities currently in use in the NCRD are provided in this section.

### 3.3.1 Mainland

**Prince Rupert Landfill**

The City of Prince Rupert Landfill (PRL), located on Kaien Island, was established in 1991 under the ENV Operational Certificate (OC) MR-7988. The PRL, is open six days per weekend receives waste from the City of Prince Rupert, District of Port Edward, and First Nations communities of Metlakatla and Lax Kw'alaams, serving a population of approximately 13,500 The most recent Design, Operating and Closure Plan developed by SHA estimated at lifespan of 54 years (2076). Currently, the OC does not place a limit on waste tonnage discharged annually, however the annual gate tonnage is currently about 10,000 tonnes. Landfill operations are conducted mainly by City staff. The landfill accepts municipal solid waste at a small onsite

Residential Drop Off designed with the intent to consolidate and provide easier access for residents.

Recyclable material accepted at this facility and diverted from disposal includes:

- Asphalt (blended with soil and used for daily/intermediate cover)
- Concrete (crushed and used for construction)
- Metal (recycled off site)
- Rock (used for construction)
- Clean Wood (unfinished/no plywood – burned)
- Yard Waste (burned)
- Soil (used for cover).

## Mainland Recycling Facilities

**NCRD Regional Recycling Depot.** This regional depot is located in the City of Prince Rupert, was established in 1996 and serves the Mainland Service Area, including the City of Prince Rupert, District of Port Edward, Electoral Areas A and C, and through service agreements with Metlakatla and Lax Kw'alaams communities. Material is received through curbside programs, public and commercial drop-off, and transfer from the Islands service area depots. The facility accepts and consolidates the materials listed in Table 8 below and ships the materials to markets in cooperation with stewardship agencies under agreement with the NCRD.

**Table 8: Materials and Product Stewards at the NCRD Recycling Depot**

| Product Steward and Materials Accepted at the NCRD Recycling Depot | |
|---|---|
| Product Care<br>• Paint<br>• Household Hazardous Waste<br>• Residential Lights<br>• Commercial Lights<br>• Residential Fixtures<br>• Non-PCB Ballasts<br>• Smoke Detectors and CO Alarms | Recycle BC<br>• Cardboard Boxes<br>• Cartons and Paper Cups<br>• Foam Packages<br>• Glass Bottles and Jars<br>• Metal Containers<br>• Other Flexible Plastic Packaging<br>• Paper Packaging<br>• Plastic Bags and Overwrap |
| ElectroRecycle | |

| Product Steward and Materials Accepted at the NCRD Recycling Depot | |
|---|---|
| • Small Appliances and Power Tools<br>• Oversized Items (i.e., treadmills, elliptical<br>• machines, demolition power tools) | • Plastic Containers<br>• Printed Paper |
| Tire Stewardship BC<br>• Car. Light Truck & Motorcycle Tires | MARR<br>• Large Household Appliances Air<br>• Conditioners, Dehumidifiers, Stoves, Ovens<br>• Refrigerators, Dishwashers |
| OPEI Canada<br>• Handheld, Walk Behind and Free-Standing<br>• Electric Outdoor Power Equipment<br>• Tractors | Call2Recycle<br>• Rechargeable Batteries<br>• Alkaline and Single-Use Batteries |
| Return-It<br>• Small Appliances<br>• Electronics | |

Tonnage reports indicate an overall decline in material over the past three years. The recyclable material streams that showed decline from 2019 to 2021 were plastics, electronics and cardboard. Increases are shown for white goods and small appliances.

Recycling data (in kgs) for this facility for the last five years is shown in Table 9. Tires are recorded by units and have not been included in this table (refer to Section 4 for the latest Tire Stewardship BC quantities).

**Dolphin Island Ecodepot and Transfer Station.** This facility in Kitkatla is operated by the Gitxaala Nation who have forged their own solid waste management approach with the Gitxaala Solid Waste Working Group (SWWG). After several years of planning and local education initiatives, Gitxaala joined the Recycle BC program in 2014. As part of this agreement, the community sends cardboard, containers, and Styrofoam to the NCRD Regional Recycling Depot by barge. Garbage collection in the area was reduced from twice per week to once per week. Additionally, in 2016 Gitxaala staff were trained to strip pollutants from waste items such as fridges, freezers, and vehicles. This allows these items to be stored safely and sent to the mainland. Certain Gitxaala staff have also undergone education for zero waste training, to further the community's efforts in waste reduction. These facilities were reported by the

Indigenous Zero Waste Technical Advisory Group to be upgraded in 2019 to include bins for sorting and storing large metal items, construction debris, clean wood, and oversized items for transport off-island.

**Prince Rupert Bottle Depot.** This facility located at 900 2nd Ave. West, is open six days per week and accepts only Beverage Containers under the Encorp stewardship program.

**Lax Kw'alaam Transfer Station.** Material is collected by the Band and shipped to the NCRD Regional Recycling Depot under agreement with the NCRD.

**Metlakatla Recycling Program.** Initiated in 2013, the Metlakatla Operations and Maintenance Department collects recyclables and ships them to the NCRD Regional Recycling Depot under agreement with the NCRD.

**Table 9: Recycling Quantities at the Regional Recycling Depot**

| Material | 2021 | 2020 | 2019 | 2018 | 2017 |
|---|---|---|---|---|---|
| Cardboard | 469,687 | 508,785 | 528,635 | 533,380 | 546,785 |
| Newsprint | 0 | 0 | 0 | 0 | 0 |
| Packaging & Printed Paper | 516,807 | 510,748 | 645,155 | 622,668 | 569,950 |
| Office Paper | 26,068 | 21,212 | 42,351 | 53,205 | 102,721 |
| Plastic | 21,600 | 15,109 | 25,325 | 24,347 | 23,936 |
| Tin Cans | 358 | 0 | 0 | 4,860 | 4,847 |
| Electronics | 54,308 | 54,136 | 56,731 | 66,053 | 75,372 |
| Small Appliances | 23,062 | 23,957 | 22,643 | 20,689 | 21,321 |
| Tires | 21,960 | 27,025 | 24,123 | 40,086 | 18,610 |
| Batteries - Lead Acid | 8,885 | 6,904 | 12,816 | 14,520 | 8,275 |
| Batteries - Dry Cell | 2,075 | 2,475 | 2,375 | 2,050 | 1,800 |
| Paint | 20,220 | 17,729 | 18,786 | 17,942 | 20,533 |
| White Goods | 172,228 | 109,497 | 108,205 | 104,525 | 108,046 |
| Non-Ferrous Metal | 0 | 0 | 1,200 | 3,000 | 0 |
| Glass Jars/Bottles | 0 | 0 | 0 | 0 | 3,000 |
| Beverage - Aluminum | 88,701 | 92,131 | 87,202 | 84,785 | 81,881 |
| Beverage - Plastic | 166,703 | 148,804 | 159,871 | 133,876 | 140,677 |
| Beverage - Glass | 559,734 | 557,324 | 621,769 | 639,699 | 652,765 |
| Beverage - Other | 15,686 | 15,166 | 19,861 | 18,584 | 19,363 |
| **Total Kgs** | **2,168,080** | **2,111,000** | **2,377,046** | **2,384,267** | **2,399,879** |
| | | | | | |
| **Total Tonnes** | **2,171** | **2,112** | **2,378** | **2,392** | **2,401** |

### 3.3.2 The Islands

#### 3.3.2.1 The Islands Landfill (IL) and Transfer Stations

Formerly the Port Clements Landfill and opened in 1993, this waste management facility is located at 71454 Highway 16, 9 km north of Port Clements, and is open six days a week. The NCRD took over management of the operation in January 1995 and at the same time developed a waste management plan with specific initiatives for the Islands area. The 2019 lifespan estimate completed by SHA predicts a final closure in 2041 (19 years). This facility also includes the Islands Waste Management recycling facility staffed by two NCRD employees. Materials are received at this depot from the other NCRD depots on the Island where they are sorted and consolidated for transport to the Mainland. The EPR material managed through this recycling center include the following collected from the Residential and ICI sector:

- Packaging and printed paper (boxboard, rigid plastic, film plastic, etc)
- Cardboard
- Tin cans
- Paint
- Engine oil, oil containers, filters and antifreeze
- Batteries (household and auto)
- Electronics
- Tires (passenger and light truck, medium truck)
- Outdoor power equipment.

Where possible, ICI and Residential quantities are kept separate for shipping.

The Masset, Skidegate and Sandspit Transfer Stations transport MSW to the Islands Landfill in roll off containers. Materials diverted from disposal at the Landfill and Transfer Stations also include the following:

- Appliances w/o CFC (no Freon)
- Appliances with CFC (fridges, freezers, etc.)
- Small Appliances (Free of charge)
- Empty 171 liter drums (45 gallon)
- Empty tanks over 171 liters (>45 gal.)
- Propane tanks 25lbs or less
- Propane tanks over 25lbs to 100lbs
- Tires under 16 inches no rim
- Tires over 16 inches to 24.5”
- Any tire with rim not over 24.5”
- Oversize tires (over 24.5”)

- Vehicle hulks stripped (no oils/battery/tires) - Not accepted at Transfer Stations
- Vehicle hulks with fluids - Not accepted at Transfer Stations
- Lead acid batteries
- Sorted Metals.

#### 3.3.2.2 Recycling Depots

**Queen Charlotte Recycling Depot**. Located at Tickers Hauling 1205 Oceanview Dr. in the Village of Queen Charlotte this depot is open three days a week. This depot has one NCRD employee and is not yet part of the Recycle BC stewardship program. Cardboard, paper and plastics are baled and transferred to the Islands Solid Waste Management facility. ICI material is kept separate where possible.

**Masset Recycling Depot**. Located at 1730 Hodges Rd. in the Village of Masset this depot is open 3 days a week and has one NCRD employee and is not yet part of the Recycle BC stewardship program. Cardboard, paper and plastics are baled and transferred to the Islands Solid Waste Management facility. ICI materials are kept separate if possible.

**Community collection bins**. These bins, open 24/7 are located at Tlell Firehall and Sandspit Super Value are used primarily by the ICI sector to keep their cardboard, paper, plastics and tin cans out of the Residential stream. The bins are emptied normally once per week by the NCRD and the materials are hauled to the Islands Solid Waste Management facility where it is processed as ICI.

#### 3.3.2.3 Other Waste Management Facilities

There is a stump dump located in Masset, which has no tipping fee. Materials at this location are not burned or composted. Additional stump dumps are located at old log sort yards on the islands.

## 3.4 Service Agreements

A number of service agreements with varying terms and conditions are maintained by the NCRD to ensure costs for collection, processing and shipping are recovered. The current agreements between the NCRD and service area participants are listed in Table 10.

**Table 10: NCRD Solid Waste Service Agreements**

| Entity | Service Area | Services |
|---|---|---|
| Old Massett Village Council | Islands | Use of Masset Transfer Station and the Islands Landfill for residential MSW drop-off and disposal<br><br>Collection of user fees by the Old Massett Village Council on behalf of the NCRD |

| Entity | Service Area | Services |
|---|---|---|
| Skidegate Band Council | Islands | Use of Skidegate Transfer Station and the Islands Landfill for residential MSW drop-off and disposal |
| Big Red Enterprises | Islands | Collection of MSW from residential dwellings, apartments and customers in the Islands Waste Management Area including:<br><br>Moresby Island<br><br>Queen Charlotte City and Skidegate Landing<br><br>Chinukundl Creek to Tlell<br><br>Port Clements to Nadu Road<br><br>Village of Masset and Graham Island North/Towhill Road, South of Masset to Pure Lake |
| Gitga'at First Nation<br><br>(Hartley Bay) | NCRD | Recycling services, including the acceptance, processing and transfer of recyclable materials to the NCRD Regional Recycling Depot |
| Lax Kw'alaams Band | NCRD | Recycling Services including the acceptance, process and transfer of recyclable material at the NCRD Regional Recycling Depot from the Lax Kw'alaams recycling facility |
| Metlakatla Governing Council | NCRD | Recycling Services including the acceptance, processing and transfer of recyclable material to the NCRD Regional Recycling Depot |
| Village of Masset | Islands | Solid Waste Services including waste collection and recycling services<br><br>Collection of user fees by the Village of Masset on behalf of the NCRD |
| Village of Port Clements | Islands | Solid Waste Services including waste collection and recycling services<br><br>Collection of user fees by the Village of Port Clements on behalf of the NCRD |

| Entity | Service Area | Services |
|---|---|---|
| Village of Queen Charlotte | Islands | Solid Waste Services including waste collection and recycling services<br><br>Collection of user fees by the Village of Queen Charlotte on behalf of the NCRD |

The NCRD also has agreements with stewardship agencies responsible for collecting and marketing or disposing of materials listed in the BC Recycling Regulation. These agreements take on various forms and are regularly reviewed and amended to ensure efficiencies. Refer to section 3.5 for a list of the stewardship agencies operating in the NCRD.

## 3.5 Existing Diversion Strategies

As shown in previous sections the NCRD currently employs several different strategies to divert waste from disposal. The following is a summary of the current strategies in both service areas including an indication of the diversion quantities where data is available:

1. Extended Producer Responsibility - product producers are responsible for end of product life
   a) BC Used Oil Management Association (BCUOMA - Islands only) – used lubricating oil, oil filters, oil containers, used antifreeze and antifreeze containers. [2020 Annual Report: 223,385 L Oil, 36,320 Filters, 13,815 kg Containers, 6,571 L Antifreeze]
   b) Major Appliance Recycling Roundtable (MARR) – stoves, fridges, freezers, washers, driers, etc [6 collection sites – no quantities shipped in 2019/2020]
   c) Recycle BC (Mainland and anticipating Q2 2022 for Islands) – packaging and printed paper [2020 Annual Report: 3 facilities, 488 tonnes]
   d) Call2Recycle (Islands & Mainland) – household batteries [2020 Annual Report: no reporting by Regional District]
   e) ElectroRecycle (Canadian Electrical Stewardship Association, CESA) – small appliances and power tools [No 2020 Annual Report on quantities by Regional District]
   f) Encorp Pacific – beverage containers [2020 Annual Report: Aluminum, Plastic, Glass, Polycoat & Other beverage containers total was 343 tonnes; 2 Return-It Depots, 1 Processing Plant]
   g) Product Care Recycle – paint, household hazardous waste, lights and smoke alarms [2020 Annual Report: 12.2 tonnes Paint, 1.7 tonnes Aerosols, 0.54 tonnes Solvent, 0.07 tonnes Alarms, 2.9 tonnes lights/bulbs, 23.3 tonnes CESA (small appliances & power tools ]

h) Tire Stewardship BC – collects tires in both Islands and Mainland service areas [2020 Annual Report: PLT/MT/AG/LS 137.55 tonnes]

i) RecycleMyCell – collects used cell phones at The Source and Freedom Mobile in Prince Rupert [2019 Annual Report: No quantities provided by Regional District]

j) Outdoor Power Equipment Institute (OPEI) – lawnmowers, leaf blowers, etc [2020 Annual Report: 4 collection sites; 314 tonnes]

2. Convenient drop off depots for recyclable material operated by the NCRD – five on Haida Gwaii [2021: 2,147 m3 collected and shipped] and one on the Mainland [2021: 1,315 tonnes processed and marketed]
3. City of Prince Rupert curbside recycling collection program – started in January 2022 under agreement with Recycle BC
4. Waste separation opportunities at disposal facilities for the following materials:
   a) EPR items: major appliances, tires, batteries [included in quantities listed above in item 1.]
   b) Organic materials (clean wood, logs and branches for burning) [not tracked]
   c) Empty drums/tanks [not tracked]
   d) Propane tanks [not tracked]
   e) Vehicle hulks stripped (no oils/battery/tires) - Not accepted at Transfer Stations [not tracked]
   f) Vehicle hulks with fluids - Not accepted at Transfer Stations [not tracked]
   g) Sorted Metals [no recent data available]
5. Initiatives already implemented under the 1996 SWMP.

## 3.6 Waste Diversion Tools

### 3.6.1 Bylaws

The NCRD has adopted bylaws for the management of solid waste, including service establishment bylaws, reserve establishment bylaws, and rates and regulation bylaws. The City of Prince Rupert has regulation bylaws for the collection of solid waste, and for solid waste rates, with the recent adoption of bylaw 3480 which came into effect on January 1, 2022 for the new recycling curbside collection service. The District of Port Edward has a regulation bylaw for the collection of solid waste. A summary of these bylaws is included in Table 11.

**Table 11: Solid Waste Related Bylaws within the NCRD and Incorporated Areas**

| Administration | Bylaw No. | Amending Bylaws | Bylaw Name | Service Area | Adoption Year |
|---|---|---|---|---|---|
| City of Prince Rupert | 3480 | | Solid Waste Management Bylaw | City of Prince | 2021 |

| Administration | Bylaw No. | Amending Bylaws | Bylaw Name | Service Area | Adoption Year |
|---|---|---|---|---|---|
| | | | | Rupert | |
| NCRD | 263 | | Regional Solid Waste Management Plan | NCRD | 1996 |
| NCRD | 270 | 270.1 | Collection Service Establishment Bylaw | Mainland | 1994 |
| NCRD | 271 | 271.1 | Collection Service Establishment Bylaw | Islands | 1994 |
| NCRD | 276 | 296, 308, 317, 333, 345, 351, 402, 415, 435, 466, 468, 513, 514, 520, 525, 536, 573, 584, 669 | Islands Solid Waste Regulations, Fees, and Charges | Islands | 1995 |
| NCRD | 568 | | Skeena-Queen Charlotte Regional District Regional Recycling Reserve Fund Establishment Bylaw | NCRD | 2013 |
| NCRD | 569 | | Skeena-Queen Charlotte Regional District Islands Solid Waste Reserve Fund Establishment Bylaw | Islands | 2013 |
| NCRD | 570 | | Skeena-Queen Charlotte Regional District Landfill Closure Reserve Fund Establishment Bylaw | NCRD | 2013 |
| NCRD | 587 | | Skeena-Queen Charlotte Regional District Regional Recycling Fees and Charges Bylaw | NCRD | 2014 |

| Administration | Bylaw No. | Amending Bylaws | Bylaw Name | Service Area | Adoption Year |
|---|---|---|---|---|---|
| NCRD | 588 | | Regional Recycling Advisory Committee Bylaw | Mainland | 2014 |
| NCRD | 643 | | North Coast Regional District Island Solid Waste Capital and Planning Reserve Fund Establishment Bylaw | Islands | 2019 |
| NCRD | 644 | | North Coast Regional District Regional Recycling Capital and Planning Reserve Fund Establishment Bylaw | NCRD | 2019 |
| NCRD | 660 | | North Coast Regional District Regional Solid Waste Management Reserve Fund Establishment Bylaw | NCRD | 2019 |
| NCRD | 672 | | North Coast Regional District Five-Year Financial Plan Years 2021-2025 Bylaw | NCRD | 2021 |
| District of Port Edward | 666 | | Refuse Rates & Regulations Bylaw | District of Port Edward | 2015 |

Bylaws that set restrictions and prohibitions on acceptance of waste materials at disposal facilities when there are economical beneficial reuse or recycling options available are being used to help divert materials from disposal. Variable tipping fees at disposal facilities that encourage prior separating and sorting of materials to save in disposal fees when arriving on site is also a significant diversion tool when it comes to affecting public behaviour and the decisions to avoid disposal.

### 3.6.2 Waste Prevention Initiatives

Initiatives to specifically address reduction of waste generation (the first R) have not been an area of focus for the NCRD. In 2014 some educational outreach by a waste reduction coordinator was conducted on the Mainland using grant funds but this has not been continued.

### 3.6.3 Waste Reuse Initiatives

The NCRD Recycling Depot participates in the Paint Share program through Product Care, where the public can pick-up left-over paint that has been dropped off for recycling. The program is free and sets no limits to how much paint can be taken.

# 4 OPPORTUNITIES AND OPTIONS

When looking at options and opportunities for waste diversion in the NCRD it is useful to examine what other coastal northern BC communities are doing. Kitimat-Stikine and Central Coast Regional Districts are two areas that have similar solid waste management planning challenges.

**RDKS 2021 Solid Waste Management Plan**

- Encourage reduction of single-use items and packaging and support member municipalities with implementation of bylaws to restrict the distribution of single-use items
- Conduct targeted campaigns for waste reduction
- Adopt a green purchasing policy that supports the 3Rs
- Develop a contractor's guide to the 3Rs
- Support reuse through share sheds and/or reuse stores
- Support reuse and/or repair events
- Encourage deconstruction instead of demolition
- Improve accessibility to recycling
- Increase diversion of CRD waste
- Provide continuous diversion education and outreach programs coupled with enforcement
- Support ICI to encourage waste diversion
- Reduce recycling costs
- Organics diversion through establishment of processing capacity at suitable facilities, amending bylaws, and supporting communities to introduce or enhance curbside collection.

**CCRD 2017 Solid Waste Management Plan**

- Provide an integrated education and communications program to coincide with the opening of the new Eco-Depot and Transfer Station

- Provide a community composting operation at the new Eco-Depot and Transfer Station
- Provide regulatory incentives to encourage source-separation

Other waste diversion initiatives implemented in other regional districts that could be considered include the following:

- Organics bans at disposal facilities starting with the ICI sector to drive development of private processing capacity
- Consider incentivizing composting through the use of a tax break on backyard residential composting
- Seek provincial and/or federal funding for organics processing
- Implement composting workshops using staff or community groups to demonstrate the value of diverting organics
- Encourage development of a used building supplies retail store
- Fund the removal of abandoned boats and marine debris, with the potential of deconstructing boats for salvage and further recycling, as well as provision for safe disposal of abandoned hazardous materials
- Ban single-use plastic bags (municipal bylaws)
- Deconstruct mattresses and box-springs at landfills to recycle the metal springs
- Investigate alternative uses for new drywall cut ends (don't contain asbestos)
- Include yard waste, wood waste (clean and dirty) and logs and stumps grinding in landfill operations (use for fabricated cover and biocover)
- Encourage textiles and clothing reuse through on-site donation bins under agreement with private not-for-profit organizations
- Cooperate with neighboring jurisdictions on transport of reuse and recyclable materials.

## 4.1 NCRD Opportunities by Sector

The opportunities listed in this section are divided into Administrative, Residential, Industrial/Commercial/Institutional and Construction/Renovation/Demolition and are derived from the previous lists in Sections 2.1.3 and 2.3 to ensure all topics selected by the PTAC are not overlooked and initiatives that could be carried forward from the existing SWMP are not disregarded.

### 4.1.1 Administrative

**A-1: Improve the operational efficiency of the NCRD waste management system.** This general initiative will be outlined more thoroughly as part of Technical Memo 4. In short, it involves the regular examination of each solid waste management service to measure and refine processes, employees/contractors, technology and financials with the goal to continually improve these aspects to improve operational efficiency. It is recommended that a set of

parameters be developed that can be assessed quarterly or annually by the service area manager in order to accomplish this task, including but not limited to, quantity of each type of material handled by source (jurisdiction) and type (Residential, ICI, CRD), costs (wages, utilities, maintenance, trucking, other), revenues and number of operating hours. Making this data available will help determine the cost per tonne of material managed, plan for changes to the services, manage assets and prepare cost/benefit analyses for Board decisions.

**A-2: Continue monitoring solid waste management facilities and services**. As described in A-1, this initiative can be accomplished through the collection of service specific data and will support operational efficiency improvements.

**A-3: Improve service delivery to rural and underserved communities in the Island and Mainland service areas**. Delivery of waste collection, processing and disposal services in the NCRD rural communities has undergone fairly recent improvements initiated by the NCRD directly and by other jurisdictions including increased access to facilities through management agreements and extended operating hours. However, there are still some areas of the region that remain underserved with respect to waste diversion opportunities.

**A-4: Improve transportation of materials between service areas**. Examining in detail the routes (including ferry schedules) and costs of transporting recyclable and refuse between the Islands facilities and the Mainland is essential to understanding where improvements can be made. As listed in A-1, data is needed in order to assess whether or not shipments are efficient or need to be reconfigured, including outsourcing versus in-house provision of the transportation, compaction of materials versus hauling loose, and scheduling shipments. Reviewing site access for contractors and availability of switch bins.

**A-5: Develop cost recovery models**. This initiative is the primary topic of Technical Memo 4 and will be covered in detail.

**A-6: Establish a permanent Islands Solid Waste Advisory Committee**. This initiative was implemented previously but discontinued due to changes to the governance of Islands services. It is a carry forward from the 1996 SWMP. Reestablishment of the Islands Solid Waste Advisory Committee will assist with the management of the Islands Solid Waste service.

**A-7: Expand the list of prohibited wastes**. Expanding the list of waste prohibited at disposal facilities supports the diversion of materials for beneficial reuse or recycling but must be done cautiously to ensure there are viable, sustainable and economical options available before they are banned. Wastes that could be prohibited are described more in the following sections.

**A-8: Update Bylaws**. Current bylaws do not restrict EPR materials from landfills and curbside programs and may be out of compliance with EPR agreements. For example, Bylaw No. 587 may be out of compliance with the MARR program as the bylaw includes charges for the disposal of major appliances. Recommend that this bylaw be amended to ensure compliance with EPR agreements.

### 4.1.2 Residential

**R-1: Fund a Waste Reduction Coordinator.** This initiative is a carry forward item from the 1996 SWMP as it was not implemented but there remains some interest in dedicating a full or

part time employee or contractor to assist with waste reduction communication and education in the region. This is a common and specialty skilled position in many regions to assist with implementation of the SWMP and help ensure goals and targets are being met. Although coordinators can assist in an operational capacity, they are normally focused and dedicated to coordinating events, delivering status reports and interacting with Interested Parties to monitor any barriers and challenges that may arise during implementation.

*Estimated diversion quantity potential:*

*Based on an estimated quarter percent improvement in the diversion of each of the 15 divertible material categories this is estimated at **483 tonnes per year** (3.7% of available quantities in the waste stream).*

**R-2: Assist users and improve their participation in waste segregation and diversion programs**. In order to improve participation in and assist users with diversion of waste from disposal it is necessary to first determine if in fact participation is low and why it is low. Commonly this is accomplished through a public survey. Survey's can be conducted at each facility to assess the user's knowledge of options for segregation and diversion. Once the results are compiled it may become clearer where improvements in communication and education can be made and what is needed with respect to additional personal attention, variable fees to incentivize separation and sorting prior to arriving at a facility, and/or improved signage at the facilities.

Tools such as RecycleCoach, a mobile phone App, are used in many municipalities and regions to assist residents with quick reference to collection schedules and drop off locations for materials. Subscriptions fees are paid to use these Apps on a fee for user basis. The region specific information is regularly updated by the subscription holder's staff.

*Estimated diversion quantity potential:*

*Considered to be included in item R-1*

**R-3: Maximize compliance with new and existing stewardship programs**. As more agreements with product stewards are made available and secured it will be important to monitor compliance with the terms and conditions to ensure maximum revenues are received and fines or non-compliance notices are not received. Good record keeping and communication are paramount. NCRD should make sure the terms and conditions are clearly laid out and in writing with acceptable service change notices and possible compensation for withdrawal. Good communication with each steward is also very important in order to maintain proper service levels. Consider space constraints at Island facilities.

*Estimated diversion quantity potential:*

*Securing the recent MARR program in the region resulted in an estimated 50% increase in number of major appliances collected. This is not unusual for the first year or two of a newly introduced stewardship program (stored products come into the system). Moving from a drop off only system to curbside collection can also show a marked improvement in quantity. The newly implemented Prince Rupert Recycle BC program has produced 33 tonnes in January, a normally unusual month after Christmas. Accounting for a*

*possible 30% increase in participation over drop off this initiative is estimated to improved diversion by **400 tonnes per year** (10% of available quantities in the waste stream).*

**R-4: Optimize recycling efficiencies by increasing diversion rates for residential materials or commercial generators that are below average**. It may be necessary to monitor sources of recyclable materials that show a decline in quantities generated on a monthly or quarterly basis to be proactive and ready for possible revenue decreases. It is noted that markets can decline on a regular basis depending on many economic factors regionally and globally. At the same time regularly researching alternate generators that could help balance or mitigate these declines in quantity received and processed would be beneficial. Assessing participation in the recycling programs may require 'ride alongs' with residential collection trucks and face-to-face meetings with ICI generators. Initiative R-1 provides for additional labour to assist with these types of tasks. Consider space constraints at Island facilities.

*Estimated diversion quantity potential:*

*Without the assistance of a waste reduction coordinator (or similar additional position) at the NCRD it may not be possible to complete the research and tracking needed to accomplish these additional tasks, therefore, an estimated **100 tonnes per year** is allocated for this initiative using current staff (2% of available quantities in the waste stream).*

**R-5: Develop a strategy to reduce single-use items**. Focusing on reducing the use of single-use items such as plastic grocery bags, take-out containers and straws has been gaining a lot of momentum throughout North America. Currently, there are no initiatives that work toward limiting or instituting a ban on single-use items in the NCRD. However, in 2019 the Village of Queen Charlotte's Council voted to move forward with an investigation into public opinion on a potential single-use plastic ban. Polls resulted in less than 50% support for bans on these materials. Other coastal cities in B.C. have enacted a single-use plastic ban such as Tofino and Ucluelet, and recently the Province has revised a regulation under the Community Charter to implement municipal bans on certain single use plastics without the need for Provincial approval of a bylaw. This regulation applies to municipalities but not regional districts who still require provincial approval. Reducing the use of single-use items not only saves landfill space but also helps to reduce litter, one of the biggest drivers for this initiative.

*Estimated diversion quantity potential:*

*It is estimated that North Americans produce an average of 50 kg of single-use plastic waste per year. As this is likely more relevant to the medium to large cities that have access to extensive coffee shops and other take-out establishments, 10% of this amount is practical for the NCRD. Therefore, this initiative has a potential of diverting about **10 tonnes of waste per year** (0.05% of available quantity of plastic in the waste stream).*

**R-6: Develop a food waste reduction strategy**. Since food waste is one of the largest components of refuse going to landfill (25% or estimated in the NCRD), diverting this 'low hanging fruit' will make the largest impact on diversion in most communities. There are many reasons to keep organic waste out of landfills including reducing Greenhouse Gases (GHG) and slowing down climate change, using or converting a beneficial material for soil improvement and

conserving airspace in the landfills so they last longer than expected. The first step is to encourage food waste reduction, meaning educate the public about how to buy food in a way that does not result in waste. The National Zero Waste Council's Love Food Hate Waste campaign materials are available to local governments including display panels and brochures. It is common to set up display booths at public events and farmer's markets to help educate the general public. The NCRD's website can also be updated to include these materials.

Backyard composting is also a common initiative that local government implements involving distribution of subsidized composters and providing workshops and educational materials to accompany the distribution. Having readily available compost to improve soils and garden beds at one's home can reduce costs for fertilizer and keep this valuable material out of landfills.

Processing capacity for organic waste is usually the limiting factor for implementing collection of organics, especially if local government waits for private investment. However, this can be pushed somewhat by banning organics from the local landfills with sufficient notice. Once infrastructure is available residential programs can be implemented. The City of Vernon will be implementing a weekly curbside collection program for food scraps starting in May 2022. The garbage will be collected bi-weekly which keeps the extra costs manageable at $4/home/month. They received a grant for purchasing the carts and kitchen catchers. Prior to this program they set out large front load bins for drop off to assess the interest in organics diversion. The bins are tipped twice weekly and will remain in place for use by the ICI sector. The City's primary message is that this program supports their Climate Action Plan. This and other programs in the north Okanagan would not have been possible without the investment by a local farmer in an in-vessel composting facility to co-manage their chicken farm waste. This is one of two recent initiatives in the north Okanagan to co-compost MSW and agricultural waste.

A comprehensive food waste reduction strategy can start simply with education (e.g. Love Food Hate Waste and Food Security initiatives) and then move into collection as funding and processing capacity becomes available. The Gitxaala Nation has expressed interest in composting, as reported in the Gitxaala Nation Case Study that states a Jora composter trial at the community garden in the summer months was planned, to be followed by community-wide compost program. It is unknown when/if this initiative was implemented.

The Village of Port Clements, and the Village of Queen Charlotte have included policy in their respective OCPs to work with the NCRD to seek and expand recycling and composting opportunities for the villages, and to expand recycling without increasing GHG (VQC OCP 2017; PC OCP 2012).

*Estimated diversion quantity potential:*

*A study completed for the RDNO in 2017 (RDNO Organics Management Options Study, Carey McIver & Associates, 2017) reviewed a number of jurisdictions' diversion rates, including the Regional Districts of Nanaimo and Cowichan Valley, showed a diversion rate of 52 kg per capita per year. Given that most of the communities in the NCRD receive curbside refuse collection, there would not be a need to set up a drop off location for non-serviced residents. The diversion quantity is therefore estimated at* ***900 tonnes per year*** *(30% of the available compostable organics in the waste stream).*

**R-7: Collect household hazardous waste (HHW).** To prevent harming human health and the environment, it's essential that hazardous waste is handled, stored, transported, treated and disposed of properly. Waste that is classified/defined as hazardous waste must be managed according to the rules and standards set out by the Environmental Management Act and the Hazardous Waste Regulation. Wastes may be "hazardous" for many different reasons:

- They are corrosive, ignitable, infectious, reactive and toxic (the "acute" hazard characteristics)
- They have the potential to harm human health or the environment in a subtle manner over long periods of time (the "chronic" hazards)
- They may range from paints, oils and solvents to acids, heavy metal-containing sludges and pesticides.

Ongoing collaboration with communities, public organizations, industry leaders and private agencies ensures that current technology and best practices guide the handling and disposal of hazardous waste. Stewardship agencies that have taken on the responsibility of end of life for HHW include Product Care and BCUOMA who currently manage a select number of products in the NCRD. These two agencies reported quantities as listed in Section 3.5 above. For recycling depots that do not have the full service programs it would be beneficial for protection of the environment to pursue agreement amendments or new agreements with these two stewards. Consider space constraints and staff safety for this initiative.

Also recommended is the establishment of a paint share program for the Island (currently only in Prince Rupert).

> *Estimated diversion quantity potential:*
>
> *We have recently learned that BCUOMA is expanding its Stewardship Plan to include a wide range of automotive products and their packaging. As stewards get more producers on board avenues will open for extra collection and diversion. Additional to the 17 tonnes of HHW diverted in 2020 by Product Care and the thousands of litres of used oil and antifreeze diverted by BCUOMA, it is estimated that a full service depot in Prince Rupert and at the Island Landfill could capture another **5 tonnes of HHW per year** (2% of the available HHW in the waste stream).*

**R-8: Encourage reuse such as thrift stores.** There are a number of thrift stores well established in the region including in Prince Rupert, Masset and Queen Charlotte that are instrumental in diverting used clothing and other household items from disposal. Supporting these already established not-for-profit and for-profit businesses can include adding a Reuse message to the NCRD website that directs used goods to these organizations without supporting one over the other, and organizing a used clothing drop off bin at NCRD facilities. Diabetes Canada and other charities will also set up donation bins at almost any accessible business.

The City of Markham in Ontario implemented a program in 2015 (first piloted) and by 2017 80 donation bins were set up throughout the City at fire stations, community centres, arenas, commercial developments and mulit-residential properties. They ended up collecting 12 times the original goal of 113 tonnes. The other outcome besides diversion from landfill is the offsetting of GHGs by avoiding production of new fabrics that require vast amounts of water and

chemicals and the addition of jobs to manage the influx of reusable/resalable clothing. The Federation of Canadian Municipalities helped fund the pilot program.

*Estimated diversion quantity potential:*

*With additional advertising and implementation of donation bins, it is estimated that **30 tonnes** (5% of the available textiles in the waste stream) can be diverted per year.*

**R-9: Work with local bicycle retailers for inclusion in the Tire Stewardship BC bicycle tire program**. Tire Stewardship BC recycles bicycle tires and tubes in BC and as of November 2021, the nearest location to the NCRD to drop off these tires is the McBike Shop in Terrace. Since Tire Stewardship is active in the NCRD it should be possible to set up a drop off location for bicycle tires and tubes on both the Island and Mainland. Prince Rupert and Masset have bicycle shops in their municipalities.

*Estimated diversion quantity potential:*

*Estimating one bicycle per household (8,867) in the NCRD and replacement of the tires every ten years the number of tires to be recycled is potentially 1,760 every year with the quantity being **1.8 tonnes per year (1 kg/tire including tube)**.*

### 4.1.3 ICI

**I-1: Encourage initiatives for commercial organics diversion**. Encouraging diversion of organics generated in the ICI sector often starts with education and showing how a generator can save money on tipping fees by reducing the amount of food waste produced or finding an alternative to paying disposal fees such as providing food waste to farmers or compost facilities. Government policy can drive changes to organics disposal by providing a disincentive through raising tipping fees or banning organics at a disposal facility. Starting with the education component may require additional staff as described in R-1 above. Implementing a surcharge at a landfill or banning organics from the ICI sector at a landfill normally requires that there is an alternative in place for this sector. A long implementation period for such policies can drive the development of alternatives such as private sector composting facilities or digesters that also utilize methane as an alternative fuel source.

*Estimated diversion quantity potential:*

*According to the UN Environment Program Food Waste Index Report 2021 the average food waste from food service in high-income countries is 26 kg/capita/year. Using this statistic for the NCRD, the potential diversion of food waste from restaurants and other food services sector alone could be as high as 450 tonnes if all the waste was captured. Estimates on diversion potential are closer to 50% of the generation rate, leaving a possible **225 tonnes per year** minimum to be composted or otherwise used.*

**I-2: Enhance and enforce ICI solid waste source control.** Minimizing solid waste generation in the ICI sector often starts with education as described above for other initiatives. Waste generation audits can be conducted by waste reduction coordinators for businesses and institutions that want to set an example and use their progress for marketing purposes. If businesses and institutions do not have incentives to reduce the amount of waste generated,

they normally maintain status quo. Incentives that reduce costs of doing business usually drives behaviour. Policies implemented by government can introduce the 'stick instead of the carrot', such as raising tipping fees and banning certain materials from disposal. Where drop off collection is available, especially at no charge, businesses have options to divert waste they are unable to reduce at the source.

*Estimated diversion quantity potential:*

*Education and audits alone may not have a very large impact on waste diversion, however restricting acceptance of certain waste types and raising tipping fees or implementing surcharges at the disposal facility can impact how the ICI sector operates. Depending on the type of community and economic diversification, the ICI and Residential waste quantities can differ by 70% to 0%. Since the waste types disposed are not specifically tracked at the Islands and Mainland landfills the assumption for the NCRD, especially Prince Rupert the most populated community, is that ICI waste disposal quantities are 50% of the residential waste stream, or 2,500 tonnes. Enhancing and enforcing source control in this sector is expected to reduce disposal quantities by about 15% if the heavier 'stick' is used, therefore, an annual diversion quantity of* ***375 tonnes is estimated.***

**I-3: Recover costs of ICI PPP processing**. This initiative will be explored further in Technical Memo 3.

### 4.1.4 CRD

**CRD-1: Clean wood waste diversion and re-use**. Restrict the disposal of clean wood to divert to a clean wood burn pile or make available for re-use (salvage). To avoid burning treated wood segregation of construction cut-ends is recommended. To provide an incentive to segregate, sort and save clean and dirty wood could have varied tipping fees: much less for clean wood.

*Estimated diversion quantity potential:*

*Clean and dirty (used) wood in the Regional District of North Okanagan (RDNO) accounts for about 650 kg per household. The percentage of clean wood has been observed to be 30% of the dirty wood when RDNO was segregating the two to produce wood chips for the local co-generation facility. For a fast growing region this wood waste generation rate makes sense, however for the Islands and Mainland areas 50% of this generation rate per household is considered more practical, therefore about* ***850 tonnes*** *of clean wood waste could be segregated. It is unknown at this time how much clean wood waste is currently segregated at the two landfills, therefore whether this amount is more or less can't be determined.*

In summary, the above listed opportunities have a potential to divert 2,530 tonnes/year from disposal during the next 10 years as shown in Table 12. The recommended phasing or scheduling for implementation will be discussed in the final Technical Memo.

**Table 12: Diversion Potential Summary**

| Initiative | Waste Reduction, Reuse and Recycling | Diversion Potential (Tonnes) |
|---|---|---|
| A-1 | Improve the operational efficiency of the NCRD waste management system | N/A |
| A-2 | Continue monitoring solid waste management facilities and services | N/A |
| A-3 | Improve service delivery to rural and underserved communities in the Island and Mainland service areas | N/A |
| A-4 | Improve transportation of materials between service areas | N/A |
| A-5 | Develop cost recovery models | N/A |
| A-6 | Establish a permanent Islands Solid Waste Advisory Committee | N/A |
| A-7 | Expand the list of prohibited wastes | N/A |
| A-8 | Update Bylaws | N/A |
| | | |
| R-1 | Fund a Waste Reduction Coordinator | 483 |
| R-2 | Assist users and improve their participation in waste segregation and diversion programs | See R-1 |
| R-3 | Maximize compliance with new and existing stewardship programs | 400 |
| R-4 | Optimize recycling efficiencies by increasing diversion rates for residential materials or commercial generators that are below average | 100 |
| R-5 | Develop a strategy to reduce single-use items | 10 |
| R-6 | Develop a food waste reduction strategy | 900 |
| R-7 | Collect household hazardous waste (HHW) | 5 |
| R-8 | Encourage reuse such as thrift stores | 30 |
| R-9 | Work with local bicycle retailers for inclusion in the Tire Stewardship BC bicycle tire program | 1.8 |
| | | |
| I-1 | Encourage initiatives for commercial organics diversion | 225 |
| I-2 | Enhance and enforce ICI solid waste source control | 375 |
| I-3 | Recover costs of ICI PPP processing | N/A |
| | | |
| CRD-1 | Clean wood waste diversion and re-use | N/A |
| | **Total waste diversion potential** | **2,530** |

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# 6 DEFINITIONS

**Advisory committee**: A committee established to support the development of the solid waste management plan or the implementation of the plan. May include a public advisory committee, technical advisory committee and a plan monitoring advisory committee

**Approved plan**: A solid waste management plan approved under section 24 (5) of the Environmental Management Act

**Circular economy**: An alternative to a traditional linear economy (make ◊ use ◊ dispose). The circular economy keeps resources in use for as long as possible, extracts the maximum value from them while in use, then recovers and regenerates products and materials at the end of their service life

**Collection facility** [Recycling Regulation, B.C. Reg. 449/2004]: A facility for collecting products and materials. May also be described as a "depot" in a plan.

**Composting** [Organic Matter Recycling Regulation, B.C. Reg. 18/2002]: The controlled biological oxidation and decomposition of organic matter

**Composting facility** [Organic Matter Recycling Regulation, B.C. Reg. 18/2002]: A facility that processes organic matter to produce compost

**CRD**: Construction, renovation, and demolition waste. This definition includes land clearing waste. Also sometimes referred to in literature as DLC (Demolition, Land Clearing and Construction) or C&D

**Director**: A person employed by the government and designated in writing by the minister as a director of waste management or as an acting, deputy or assistant director of waste management

**Disposal** [Hazardous Waste Regulation, B.C. Reg. 63/88]: The introduction of waste into the environment through any discharge, deposit, emission or release to any land, water or air by means of facilities designed, constructed and operated so as to minimize the effect on the environment

**Downstream environmental impacts**: Impacts created by the use of a product after its useful life

**EMA**: The Environmental Management Act, S.B.C. 2003, c 53

**Extended Producer Responsibility** (EPR): A management system based on industry and consumers taking life-cycle responsibility for the products they produce and use. Referred to as "product stewardship" under the B.C. Recycling Regulation

**Hauler** [EMA]: A person who picks up, delivers, hauls or transports municipal solid waste or recyclable material on a commercial basis (note under EMA the term 'Waste Hauler' is defined in section 26 for the purpose of section 26 only)

**Hauler license** [EMA]: A license issued by a regional district to a hauler, under the authority of a bylaw made under EMA section 25(3) (h) (i)

**ICI**: Industrial, commercial and institutional waste

**Interested parties**: Organizations, agencies and individuals with an interest in the planning process. This includes governments (including First Nations), private sector interests, non-government and community organizations, and the public at large

**Manage or management**: Includes the collection, transportation, handling, processing, storage, treatment, utilization and disposal of any substance

**Minister**: The B.C. Minister of Environment Ministry: The B.C. Ministry of Environment

**Municipal solid waste** (MSW) [EMA]: a) refuse that originates from residential, commercial, institutional, demolition, land clearing or construction sources, or b) refuse specified by a director to be included in a waste management plan

**Municipality**: This Guide uses the generally accepted definition of “municipality” as an incorporated area that is democratically elected, autonomous, responsible and accountable. Municipalities are members of the regional district in which they are located. (Note that section 1 of EMA defines “municipality” as including regional districts)

**Operational certificate** (OC) [EMA]: A certificate issued under section 28 [operational certificates] for the design, operation, maintenance, performance and closure of sites or facilities used for the storage, treatment or disposal of waste or recyclable material

**Pollution Prevention Hierarchy**: The 5 R provincial pollution hierarchy more fully described in Part A.1.1 of this Guide

**Processing**: Any activity necessary for preparing a component of the solid waste stream for reuse, recycling, recovery or residual management

**Product stewardship**: see Extended Producer Responsibility (EPR)

**Recovery**: The reclaiming of recyclable components and / or energy from the solid waste stream by various methods including but not limited to manual or mechanical sorting, incineration, distillation, gasification, or biological conversion other than composting

**Recyclable**: In this Guide, refers to a product or substance, after it is no longer usable in its present form that can be diverted from the solid waste stream. (Note that "recyclable material" has a more specific definition in the EMA)

**Recycler license** [EMA]: A license issued by a regional district, under the authority of a bylaw made under EMA section 25(3) (h) (i), to the owner or operator of a site that accepts and manages recyclable material

**Recycling**: The collection, transportation and processing of products that are no longer useful in their present form and the subsequent use, including composting, of their material content in the manufacture of new products for which there is a market

**Reduction or reduce**: Decreasing the volume, weight or toxicity of municipal solid waste generated at source. Includes activities which result in more efficient reuse or recycling of primary products or materials, but does not include only compacting or otherwise densifying the waste

**Regional director**: Regional Director, Environmental Protection Division of the Ministry of Environment, or someone designated to carry out authorization duties on behalf of the Regional Director

**Regional district** [EMA section 25(1)]: (a) a regional district as defined in the Local Government Act, (a.1) except in section 26, the Northern Rockies Regional Municipality, or (b) the Greater Vancouver Sewerage and Drainage District constituted under the Greater Vancouver Sewerage and Drainage District Act

**Residual management**: The disposal in accordance with the EMA of what remains in the solid waste stream following reduction, reuse, recycling and recovery activities

**Reuse**: At least one further use of a product in the same form (but not necessarily for the same purpose)

**Site** [EMA]: Any site, including those identified specifically or by class, in an approved waste management plan for the management of municipal solid waste or recyclable material. (Note under EMA this term is defined in section 25 for the purpose of section 25 only)

**Solid waste management system**: The aggregate of all sites and facilities, services and programs for managing municipal solid waste within a region

**Solid waste stream**: The aggregate of all municipal solid waste and recyclable materials, and the process through which they move from generation to utilization or disposal

**Triple Bottom Line**: Economic, environmental and social cost considerations

**Upstream environmental impacts**: Impacts from the creation and transportation of a product to where it is

**Waste management facility** (facility) [EMA]: A facility for the treatment, recycling, storage, disposal or destruction of a waste, or recovery of reusable resources including energy potential from waste

**Waste management plan** [EMA]: A plan that contains provisions or requirements for the management of recyclable material or other waste or a class of waste within all or a part of one or more municipalities

**Waste stream management license** [EMA]: A license issued by a regional district, under the authority of a bylaw made under EMA section 25(3) (h) (i), to the owner or operator of a site that accepts and manages municipal solid waste

**Zero Waste approach**: as both a philosophy and a goal, aims to reduce and ultimately eliminate garbage

# 7 LIMITATIONS

This report has been prepared by Sperling Hansen Associates (SHA) on behalf of the North Coast Regional District in accordance with generally accepted engineering practices to a level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions in British Columbia, subject to the time limits and financial and physical constraints applicable to the services.

The report, which specifically includes all tables and figures, is based on engineering analysis by SHA staff of data compiled during the course of the project. Except where specifically stated to the contrary, the information on which this study is based has been obtained from external sources. This external information has not been independently verified or otherwise examined by SHA to determine its accuracy and completeness. SHA has relied in good faith on this information and does not accept responsibility of any deficiency, misstatements or inaccuracies contained in the reports as a result of omissions, misinterpretation and/or fraudulent acts of the persons interviewed or contacted, or errors or omissions in the reviewed documentation.

The report is intended solely for the use of the North Coast Regional District. Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. SHA does not accept any responsibility for other uses of the material contained herein nor for damages, if any, suffered by any third party because of decisions made or actions based on this report. Copying of this intellectual property for other purposes is not permitted.

The findings and conclusions of this report are valid only as of the date of this report. The interpretations presented in this report and the conclusions and recommendations that are drawn are based on information that was made available to SHA during the course of this project. Should additional new data become available in the future, Sperling Hansen Associates should be requested to re-evaluate the findings of this report and modify the conclusions and recommendations drawn, as required.

We appreciate the opportunity to work with the North Coast Regional District on this project. Please do not hesitate to contact the undersigned if you have any questions.

Sincerely,

SPERLING HANSEN ASSOCIATES

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# APPENDICES

# APPENDIX A
# 1996 Solid Waste Management Plan Initiatives Status

**NCRD Solid Waste Management Plan**
**Summary of Innitiatives**

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| Innitiative Complete and Carried Forward |
| Innitiative in Progress and Carried Forward |
| Innitiative not Complete and Carried Forward |
| Innitiative not Complete and Not Carried Forward |

| Initiative | Topic | Description | NCRD Comments |
|---|---|---|---|
| M1.1.1 | Service Area | A local solid waste reduction service area be established to include Electoral Area A, Electoral Area C, District of Port Edward and the City of Prince Rupert | Yes - Bylaw No. 270 |
| M1.1.2 | Mainland Committee | A permanent Waste Management Committee (MSW AC) be established with representation from Electoral Area A, Electoral Area C, the City of Prince Rupert, District of Port Edward, and a representative from an environmental organization, to be responsible for administering the Mainland Solid Waste programs (Appendix M). | PTAC encompasses both areas and is established solely for the purpose of guiding plan development. MSWAC now Regional Recycling Advisory Committee (RRAC). RRAC members are all on the PTAC. |
| M1.1.3 | Programs | Recycling, waste reduction education and composting programs be administered by the Mainland Solid Waste Management Advisory Committee (Appendix M2), which will in turn report to the Skeena-Queen Charlotte Regional District Board (the Board). | For now - yes. RRAC will continue to meet once this project is over. We've made this decision so as not to overwhelm RRAC members with meetings between PTAC and RRAC. |
| M1.1.4 | First Nations Coordination | First nations organizations including Indian Villages and Tribal Councils will be invited to participate in various regional waste reduction initiatives including backyard composting. | Yes - the NCRD maintains service contracts with mainaldn FNs to transport materials from reserve to PR recycling depot for processing. NCRD also holds agreements with islands FNs for service. Agreements provided. |
| M2.1.1 | Bag Limits | A 2 bag per week limit be established for Prince Rupert and Port Edward (defined in Appendix 3). This limit shall be reviewed annually by MSWAC. | 2 bag limit in place in Haida Gwaii. CoPR was previously 2 bag but this has changed with new curbside bins. Residents now able to include as many bags as will fit in the provided bins. |
| M2.1.2 | Fee for Extra Bags | Additional volumes be accepted when a pre-paid tag is attached. Tags will be circulated in a convenient manner determined by the City of Prince Rupert and the District of Port Edward. | Fees for additional bags charged on Haida Gwaii. Fees for larger garbage bins charged in CoPR. |
| M2.1.3 | Use of Tag Fees | Encourage the City of Prince Rupert and the District of Port Edward to use the tag fees in the ways that will encourage waste reduction, provide relief to special groups requiring assistance for their waste disposal and recycling, disposal or for clean-up campaigns. | No work currently being done on this one. |
| M2.1.4 | Tipping Fees | Volume based tipping fees described in Appendix M4 be collected at the landfill. | Yes. |

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| M2.1.5 | Problem Wastes | Fees will be collected for tires, white goods and other problem wastes specified in Appendix 4. Fees should be set high enough to recover costs associated with processing these materials. | Yes. MARR stewardship program, |
| M2.1.6 | Special Waste List Review | MSWAC shall review Appendix 4 annually and recommend changes to the Regional District Board and its member municipalities. | Information requested from the City of PR on January 20, 2022. |
| M2.2.1 | Material Bans & Surcharges | Once adequate recycling or reuse options exist, MSWAC will consider applying material bans and surcharges for certain items or materials of the waste stream identified in Appendix M4. | Yes - completed through bylaws. |
| M3.1.1 | Education | A Mainland Waste Reduction Coordinator be contracted to organise regular solid waste and recycling waste reduction education programs for schools, local government and other interested groups. | No. This was last completed with additional grant funding in 2014(?). |
| MR.1.2 | Education Funding | All mainland areas participating in the waste reduction service area identified in Policy M1.1.1 will participate in the funding of education program. Funding will be limited by bylaws as established in appendix M2. | Not currently. 2014 was last educational program for reccyling on mainland. |
| M3.1.3 | Provincial Support | Apply to BC Environment for funds to assist in support in providing waste reduction education. | No. |
| M4.1.1 | Backyard Composters | Backyard composting will be encouraged and subsidised from time to time with funds provided by the Provincial Government and from levy assessed from property taxes from the Mainland area. | No. |
| M4.1.2 | Cooperation with other Areas | To reduce shipping costs and increase the frequency of backyard composter distribution, other jurisdictions be invited to participate in sharing shipments of composters. These include all Indian villages with the Mainland area (and Kincolith), the Queen Charlotte Islands and, if necessary, communities with the Kitimat Stikine Regional District. | To my knowledge this was not undertaken. |
| M4.1.3 | Other Composting Initiatives | MSWAC will encourage initiatives for commercial and backyard composting operations by having the education coordinator provide information on composter design and operation and any existing operations that will accept compostable materials. | No. |
| M5.1.1 | Recycling Participation | All mainland areas participating in the waste reduction service area identified in Policy M1.1.1 will participate in the funding of a Mainland Regional Recycling Service. Funding will be limited by bylaws as established in appendix M2. | Yes. |
| M5.1.2 | Recycling Service | Recycling services to be provided to residents in the Mainland area according to: 1) equitable access to recycling services for all area residents.; 2) materials that will provide the greatest waste reduction; 3) materials that would cause adverse environmental impacts if disposed of by alternate methods; all from the funding provided in policy M5.1.1. Current service specifications and materials accepted are specified in Appendix M5. | Yes. |
| M5.1.3 | Additional Services | Additional services that facilitate recycling or reuse may be established from time to time on a fee for service basis | Drop off bins available in remote locations. |
| M5.1.4 | Envirocenter | Consider establishing a convenient facility that will combine local recycling services with provincially regulated recycling and reuse programs such as paint recycling and beverage container returns. Extra costs associated with the provincial programs would be recovered from associated revenues. | Yes. |

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| M5.1.5 | Recycling Staff | Staff be hired to provide Recycling Services in Appendix 5. An operations manager will be responsible for the day to day operations of the service, including hiring any other staff required. The Manager will report to MSWAC and the Regional District Administrator. | Yes. |
| M5.1.6 | Review of Service | The Operations Manager will continuously monitor the performance of the Recycling Service and market conditions affecting it, and will recommend changes to MSWAC for approval. MSWAC will recommend the Regional District Board ratify any changes to services outlined in Appendix M5. | Yes - periodically. Has been awhile since changes have been recommended. |
| M5.1.7 | Recycling Capital Expenditures | A Recycling Capital Reserve be established. An amount, set in the annual budget, will be established for transfer into the capital reserve to be used to replace existing equipment and purchase new equipment according to the Regional Districts five year capital expenditure program. Any surplus funds resulting from operations will be deposited in this fund. | Yes. |
| M5.2.1 | Problem Waste Recycling | Wastes requiring special handling such as white goods (fridges, stoves etc.), tires, batteries, auto hulks and other materials described in Appendix 4 will be considered for recycling by 1) private enterprise with coordination provided by the Regional District or 2) by the Regional Recycling service on a fee for service basis. | Yes. |
| M5.2.2 | Problem Waste Coordinator | A Regional District employee will be designated as Problem Waste Coordinator. He/She will facilitate the proper disposal of problem wastes by coordinating existing public and private disposal methods. | Yes. Currently undertaken by Tim and Rob in their respective roles. |
| M5.2.3 | Special Skills Required | If available and affordable, a member of the Recycling service staff will be given appropriate training to handle any problem wastes included in Appendix M4. This may include skills required to remove ozone depleting substances from refrigerators, air-conditions units and freezers. Alternatively handling of problem wastes may be contracted to a skilled operator. | Yes. |
| M5.2.4 | White Goods Recycling | The Regional District (all areas participating) consider purchasing a portable white goods/auto hulk compactor. Once sufficient materials (accepted materials listed in Appendix M4) have been accumulated at any landfill within the Regional District, the portable compactor and skilled operator will be available to process and arrange to recycle these materials. Any ozone depleting substances will be removed prior to compaction. The cost of this service is to be recovered from user charges described in policies from the sale of scrap metal. | This service is contracted. |
| M5.2.5 | Salvage Rights | Request the City of Prince Rupert grand exclusive salvage rights to a contractor to recycle any additional materials deposited in the landfill. The successful contractor would pay the City an annual fee, document and report the weight of material diverted and operate according to conditions established by the City. | City of PR contracts this as well. |
| M6.1.1 | Landfill Operation | Local authorities to continue to operate landfill sites and other waste disposal facilities in accordance with BC Environmental Standards. | Yes. |
| M6.1.2 | Daily Cover | Consider using geotextile tarps as an alternative to fill for use to meet daily cover requirements. | |

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| M6.1.3 | Recyclables Storage | Provide areas at landfill facilities for temporary storage of bulky recyclables such as fridges, stoves, water heaters etc. (white goods) | Yes. |
| M6.1.4 | White Goods Compactor | Provide space at the Prince Rupert Landfill or another site for a white goods auto hulk compactor. | City contracts this work. |
| M6.1.5 | Automotive Hulks | Temporary storage areas should be provided for auto hulks at all landfills except at Prince Rupert. Consideration will be given to establishing an auto hulk marshalling yard in the Prince Rupert - Port Edward area. | (list as blue due to no update from NCRD) |
| M6.1.6 | Wood and Demolition Waste | Encourage the City of Prince Rupert to purchase a tub grinder that could process wood waste and demolition waste to be suitable for cover material. | Not taking place. |
| M6.1.7 | Tires | Investigate the possibility of utilizing a tub grinder for processing tires. If Feasible, establish a site for tire storage and a trailer container at the Prince Rupert landfill or another site. | Not been completed. |
| M6.2.1 | Landfill Closure | In accordance with Ministry of Environment solid waste disposal guidelines, sites are to be closed with the assistance from BC Environment. | Yes. |
| M6.3.1 | Capital Costs-Prince Rupert | Pay for the initial capital costs of the Prince Rupert Landfill by applying a portion of tipping fees according to a formula derived from the expected capacity of the landfill as outlined in Appendix M4. Establish a reserve fund to which funds will accumulate pay for landfill capital costs. | Yes. |
| M6.3.2 | Operating Costs | Annual operating costs be funded by user fees (tipping fees) as established by the City of Prince Rupert after consideration of transfers to the capital reserve fund described in Appendix M4. | Yes. |
| M6.3.3 | Closure Costs | Apply a portion of the tipping fees to pay for expected closure costs according to a formula derived from the expected capacity of the landfill as outlined in Appendix M4. All such funds are to be directed to the capital reserve fund described in Policy M6.3.1. | Yes. |
| M6.3.4 | Review of Capital Transfers | Review transfers of the Capital Reserve fund in Appendix M4 whenever: 1) the estimated life of the landfill is changing because of revised operating practices; 2) financing charges are revised or; 3) closure requirements are changed resulting in the need for revised closure costs. | Yes. |
| M6.4.1 | Transfer of Permit | Consider transfer of the waste management operation permit for the Prince Rupert landfill facility to the Skeena-Queen Charlotte Regional District. | No. |
| M7.1.1 | Collection Coordination | Similar standards be established for collection services in Prince Rupert and Port Edward. | Yes - garbage. Recycling curbside not provided in DoPE. |
| M7.1.2 | Collection Administration | The City of Prince Rupert and the District of Port Edward continue to administer their own collection services. | Yes. |
| M7.2.1 | User Fees | Include tipping fee costs when calculating collection user charges | Yes. |
| M8.1.1 | Schedule | Implement the plan according to the Schedule presented in Figure 4 | Yes - to the best of NCRD ability. |
| M8.1.2 | Responsibility | Responsibility for implementing various components of the plan will be set according to Figure 5 | Yes. |

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| M8.2.1 | Public Reporting | Encourage the public to report any incidents of illegal dumping to the appropriate jurisdiction. If incident cannot be investigated in a timely manner by the appropriate jurisdiction, the Education Coordinator will record the incident and forward a detailed report to the appropriate authority. | Yes - complaints taken. Education coordinator position not established. |
| M8.2.2 | Anti-Dumping Bylaws | Encourage the City of Prince Rupert and the District of Port Edward to harmonise their illegal dumping bylaws and make illegal dumping a ticket-able offense. If illegal dumping becomes a problem on Digby Island or any other Regional District administered area the Regional Board consider adopting a similar bylaw. | Believe so. Was not able to find information on DoPE. Will follow up. http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping Dumping has not been an issue in other areas of the RD thus far. |
| M8.2.3 | Education to Prevent Illegal Dumping | The Education Coordinator will work in cooperation with the Prince Rupert Civic Pride manager to publicize incidents of illegal dumping together with the public costs and fines that could be expected. | No. |
| M8.2.4 | Funding Assistance | MSWAC will apply for funding to BC Environment or any other jurisdiction that we assist in the enforcement of their legislation. | As required. |
| M8.3.1 | Public Comments | Regional District staff will keep a record of all suggestions and comments from the public and will ensure that MSWAC is kept informed of this information. | Yes. |
| M8.3.2 | MSWAC Meetings | MSWAC will meet monthly, to review the operations of the Waste Management System and to consider comments from the public. Quarterly meetings will be open to the public. | No. RRAC was meeting quartlery prior to the PTAC establishment. |
| M8.3.3 | Special Meetings | Special public meetings will be held to consider major changes to this plan. | Yes - as is currently taking place. |
| M8.4.1 | Disputes | When disputes arise between any of participating communities, the Regional District and/or contractors hired to implement the system, it should be resolved by: 1) MSWAV, which may refer the dispute to 2) participating Regional District directors and any delegates they may choose to invite, who may refer the dispute to 3) the entire Regional District Board. | Yes - disputes have been few and far between. |
| M8.5.1 | Funding Sources | Required funds are to be raised from (figure 6):<br>1) Property taxes ;<br>2) User charges from:<br>a) Quarterly unit fees<br>b) Volume based tipping fees<br>c) Bag tags; and<br>d) Special handling levies<br>3) Senior Government grants. | Yes. Bylaw provided. |
| I1.1.1 | Service Area | A local solid waste service area be established to include Electoral Area D, Electoral Area E, Village of Masset and the Village of Port Clements (figure 7) | Yes. |
| I1.1.2 | Service Agreements | Establish service agreements with the Old Masset Band Council and the Skidegate Band Council for solid waste collection and disposal. | The NCRD administers garbage collection in all civic and rural communities on Haida Gwaii. FN communities provide their own collection to the transfer stations. |

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| I1.1.3 | Islands Committee | A permanent Waste Management Islands Committee be established with representation from Electoral Area D, Electoral Area E, the Village of Masset, Village of Port Clements, Old Massett, Skidegate and representatives from environmental organizations, to be responsible for administering the Islands Solid Waste System. (Appendix I-I | No. Not currently. Would like to see this revisited as a recommendation in the updated SWMP. |
| I1.1.4 | Contract Administration | All contracts to the operation of the Islands Sub-Regional Waste Management System be administered by the Islands Solid Waste Management Advisory Committee (ISWAC), which will in turn report to the Skeena-Queen Charlotte Regional District Board (the Board). | Contracts are being administered directly by the NCRD. |
| I1.2.1 | Landfill Construction | Develop the landfill site according to the "Port Clements Sub-Regional Landfill and Operations Plan" (Landfill Plan), Appendix I-2 of this plan. | Yes. Complete. |
| I2.1.2 | Landfill Operation | Operate the landfill site according to the Landfill Plan. | Yes. |
| I2.1.3 | Landfill Construction & Operation Contract | Tender the construction and the operation of the landfill to private contracts and include a renewal clause for the landfill operation based on performance criteria specified in the Landfill Plan. | Yes. |
| I2.1.4 | Landfill Site | Purchase the existing Port Clements Landfill from the Village of Port Clements and re-imburse them for their capital items that will be used for the regional site. | Yes. |
| I2.1.5 | Environmental Monitoring | Establish environmental monitoring contracts(s) to measure water quality, stream flow and ground water levels as set out in the Landfill Plan. | Yes. |
| I2.1.6 | Review | Review the data from the Environmental Monitoring program and determine whether amendments are required to Appendix I-2 | Yes. Periodically. |
| I2.2.1 | Landfill Closure | In accordance with Ministry of Environment solid waste disposal guidelines existing sites are to be closed with the assistance of BC Environment. | Yes. |
| I2.2.2 | Transfer of Sites and Permits | Prior to the final closure plans have been prepared Skidegate and Sandspit Landfills, the Regional District twill negotiate with the Skidegate Band Council, Hecate Junk-it, and the Ministry of Environment for a transfer of all or part of the permits for those sites. | Yes. Skidegate landfill and Sandspit landfill closed. Transfer stations, septic pits maintained at sites. |
| I2.2.3 | Transfer Site Permits | Negotiate with the Ministry of Environment for an amendment of the transfer site permits for the following uses:<br>1) Transfer sites for temporary storage of municipal waste<br>2) Septage disposal (Sandspit only)<br>3) Burning sites for some categories of demolition waste<br>4) Other demolition wastes that could be used on site as fill or cover material.<br>5) Temporary storage areas for auto hulks, tires and white goods | Yes. |
| I2.3.1 | Capital Costs-Prince Rupert | Requisition money from the General Assessment from Assessment Area 750 (Area "D" and "E"), Port Clements and Masset to pay for the initial capital costs for the landfill and for a Capital Reserve Fund to pay for closure. This amount is to be reduced by funds collected from Old Massett and Skidegate for their share of the costs, which will be apportioned according to the total Islands population utilizing to the most recent census data. | Yes. Note that Queen Charlotte was not a municipality at this point in time. |

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| I2.3.2 | Operating Costs | Annual operating costs be funded by user fees as listed in Appendix I3. If the user fees are insufficient in any given year, the difference shall be temporarily funded from the capital reserve fund and be replenished the following year from the source identified in Policy I2.3.1. | Yes. Updates to rates and charges last done in 2020. May need further revision based on actual costs. |
| I2.3.3 | Review of User Fees | User fee levels shall be reviewed annually by ISWAC which shall recommend any changes to the Board. | User fees reviewed last in 2020 by NCRD staff. Inflationary adjustments made to costs. |
| I2.3.4 | Closure Fund Review | The annual level of funding to the closure capital reserve shall be reviewed every 5 years or whenever there are operational changes proposed by 1SW AC or B.C. Environment. | Reviewed by NCRD staff and Board, auditors. |
| I3.1.1 | Collection List | All occupied residences and active commercial establishments (collection units) be enumerated and entered on a list that will be updated on an ongoing bases by the Islands Waste Coordinator. | Yes - to the best of NCRD ability. |
| I3.1.2 | Other Users | Invite BC Parks and the Ministry of Highways participate in the regular collection service for their roadside refuse containers. | |
| I3.1.3 | Weekly Service | All collection units enumerated will be provided with a weekly refuse collection service. | Yes. All units accessible by road. |
| I3.1.4 | Service Areas | Local refuse collection systems be established for the following service areas (Fig 8):<br>1) Moresby Island<br>2) Queen Charlotte City/Skidegate including all areas south of Chinukundl Creek<br>3) Port Clements/Tlell including all areas south of including Nadu Road to north of Chinukundl Creek<br>4) Masset/Old Massett including areas north of Nadu Road and Tow Hill Road. | Yes. |
| I3.1.5 | Opting Out | Skidegate, Old Masset and incorporated Municipalities may opt out of the collection system prior to collection contracts being awarded. Incorporated Municipalities may only opt out if:<br>1) They provide an alternative compulsory collection service to all their residents;<br>2) They have the same level of fee surcharges for additional volumes of garbage as stated in the plan;<br>and<br>3) A portion of extra levies collected for additional volumes, as listed in Appendix I-3, be paid to the Regional District to pay for disposal costs. | Yes. Municipalities participating. |
| I3.1.6 | Service Area Revisions | If the majority of potential users in any service area defined in I3.1.4 are "opted-out", ISWAC may consider combining the remnant area with another area. | N/A |
| I3.1.7 | Collection Contract | Tender each local service area for weekly refuse service. | Yes - agreement provided. |
| I3.1.8 | Collection Specification | Specifications for the local collection service, including container sizes, transfer station use, equipment requirements shall be outlined in the contract in Appendix I-4 | Yes. |
| I3.1.9 | Sub-Contracting | Contractors may arrange to sub-contract portions of their system to other contractors. The prime contractor will be responsible for fulfilling condition of the contract. | Yes. Currently working with contractor solely. |

| | | | |
|---|---|---|---|
| I3.1.10 | Fee Collection | Tender contracts for collection of fees from all areas except Skidegate and Old Massett. Incorporated communities shall have the option of collecting fees for their residents for a rate that will cover their costs. | Yes - municipalities and FNs collect fees within their jurisdiction. Rural areas collected by the NCRD. Copies of agreements with Villages provided. |
| I3.1.11 | Unit Cost | The total contract costs for all participating service areas plus 5% contingency be summed and divided by the number of collection units to arrive at an overall collection unit fee - this fee will then be dived to determine a quarterly collection billing fee. | Not currently used as practice for determining rates. Collection rates were increased based on inflationary cost adustments in 2020. Prior to that, I'm not aware of any rate changes for this fee. |
| I3.1.12 | Collection Administration | The Islands Waste Coordinator be responsible for handling enquiries, field complains, ensuring the billing list is kept up to date and to administer the collection contracts. | Yes. |
| I3.1.13 | Unpaid Bills | All user fees that remain unpaid on December 31st shall be added to the property owners taxes or taxes in arrears as provided for in the Municipal Act. | Yes. |
| I3.1.14 | Hardship | Reduced rates may be set for those on low or fixed income. ISWAC will show the criteria necessary to obtain these rates and will establish set rates according to their annual budget. | This is currently not being done. 10% discount is available for early payment of fees. |
| I3.2.2 | Optional Commercial Collection | Successful bidders for local collection contracts be given the option of having the Regional District collect fees for additional services that:<br>1) revenue equivalent to the volume (less the regular contract) at the transfer station or landfill will be added to the contract payment; and<br>2) adequate notification and records are provided to the Islands Waste Coordinator. | The NCRD continues to contract curbside garbage collection. The NCRD collects annual garbage utility billing. I will include a copy of the most current agreement. In my opinion, there is work that needs to be done to refine the number of customers in each service area. This agreement with Big Red has been extended into 2023 (additional year), while we complete these plan updates. |
| I4.1.1 | Transfer Station Sites | Provide facilities open to the general public during hours in Appendix 4 at the following locations (figure 8):<br>1) Mas set Transfer Station<br>2) Port Clements Regional Landfill<br>3) Skidegate Transfer Station<br>4) Sandspit Transfer Station | Hours for facilities are as follows: https://www.ncrdbc.com/services/waste/landfill-transfer-stations |
| I4.1.2 | General Specifications | Design the transfer station to be durable, resist bears and vermin, low maintenance facilities for limited public use (Appendix 1-5). | Yes - transfer stations are fairly low maintenance. |
| I4.1.3 | Standard Size | The transfer stations shall be designed to accommodate 50 yd3 roll-off bins. | The NCRD owns the roll off bins. |
| I4.1.4 | Maintenance | Maintenance of the transfer stations (as specified in Appendix I-5) is to be part of the contract awarded for local collection. | |

| | | | |
|---|---|---|---|
| I4.1.5 | Haulage | The maintenance contractor shall contact the haulage contractor when the bins require emptying. | Yes. This varies in terms of length of time before emptying is needed. Rough schedules apply but may be varied based on fullness. |
| I4.1.6 | Problem Waste Storage | Storage areas will be designated for the temporary storage of auto hulks, tires and white goods at all transfer station sites. | Not all transfer station sites. See previous notes. |
| I4.1.7 | Sandspit Septage Disposal | The Septage disposal area will continue to be permitted at the Sandspit Transfer Station. | Yes. |
| I4.1.8 | Wood Waste | Burning areas for wood waste and other combustible, non-putrescible wastes will be designated at all the transfer station sites. Controlled burning of such waste will occur when permitted by the Ministry of Forest and the Ministry of Environment. | |
| I4.1.9 | Collection of Fees | The miniatous contractor shall collect fees from the public as specified in Appendix I-3. | Yes. |
| I4.2.1 | Use of Fees | Fees collected shall be applied in accordance with Appendix I-3 | |
| I4.2.2 | Capital Cost | The initial capital costs of the transfer stations be funded by:<br>1) Provincial Rural Waste Management Grants;<br>2) Taxation; and<br>3) Grants from Skidegate and Old Massett as determined by the formula in Policy 1-2.3.1 | Unsure if this is how capital costing for initial setup worked. |
| I4.2.3 | Depreciation | Additional funds will be collected from taxation and Grants from Skidegate and Old Massett as specified in Policy 1-2.3.1 to be deposited in the Capital Reserve account according to Appendix 1-3. | Yes - see provided agreements. |
| I4.2.4 | Operating Costs | Operating costs for the Transfer station will be paid from:<br>1) user charges according to Policy 1-4.2.2; and<br>2) monthly charges applied to all collection units as in Policy 1-3.1.6. | Yes. Current cost recovery may not be adequate. |
| I4.2.5 | Review | ISW AC shall annually review the transfer station fee appendix and the Capital Reserve transfer and make recommendations for changes to the Regional District Board. | Last reviewed in 2020. Not being reviewed by ISWAC; instead NCRD staff. |
| I5.1.1 | Haulage Contract | One contract be awarded to haul waste from the transfer stations and the Port Clements public drop-off to the active face of the Regional Landfill as specified in Appendix I-6. | NCRD hauling waste. |
| I5.1.2 | Hours | A schedule of hauling hours will be established by the contractor and the landfill contractor to minimize cover requirements at the landfill. This schedule is to be reviewed on an ongoing basis by the Islands Coordinator. | |
| I5.1.3 | Bin Ownership | The Regional District will provide the necessary numbers of transfer bins. The contractor will be responsible for all other equipment required (Appendix I-6). | Yes. |
| I5.2.1 | Funding | The estimated annual cost of the haulage contract will be apportioned amongst the total number of collection units and applied to their quarterly bills. | |
| I5.2.2 | Annual Review | ISW AC will annually review actual and projected costs and make recommendations regarding upward/downward adjustments. | ISWAC not currently meeting. This is not taking place. |

| | | | |
|---|---|---|---|
| I6.1.1 | Recycling Fund | A Recycling and Waste Reduction Reserve fund be established. | No. General reserve, landfill closure reserve and capital & planning reserve exist for this service. |
| I6.1.2 | Bag Limits | A bag limit, defined in Appendices I-7, be established for each collection unit. This limit shall be reviewed annually by ISWAC. | Yes. 2 bags. |
| I6.1.3 | Fee for Extra Bags | Additional volumes be accepted when a pre-paid tag is attached. Tags will be available at convenient locations as determined by the Waste Coordinator and the Local Collection Contractor with fees allocated according to Appendix I-7. | Yes. |
| I6.1.4 | Relief from Fee | No fee will be required for bags gathered during organized cleanups provided prior arrangements are made with ISWAC. | Yes. Not sure something of this nature has taken place on the islands but we have done this organizationally in the past, specifically around earth day cleanups, etc. |
| I6.1.5 | Use of Tag Fees | A portion of the tag fees, as outlined in Appendix I -7, will be directed to the Recycling Reserve. | No recycling reserve established. |
| I6.1.6 | Tipping Fees | Volume based tipping fees described in Appendix I-3 will be collected at the landfill and transfer stations (see Policies I~2.3.2 to I-2.3.4, I-4.2 and I-4.2.3 for more information). | Yes. |
| I6.1.7 | Problem Waste List Review | ILSWAC shall review Appendix I-3 annually and recommend changes to the Regional District Board. | Wastes are reviewed periodically. Has been awhile. ISWAC not currently established. |
| I6.2.1 | Material Bans & Surcharges | Once adequate recycling or reuse options exist, ISWAC may recommend to the Regional District Board the implementation of material bans or surcharges for certain items of the waste stream. | Yes. |
| I7.1.1 | Education | The Island Coordinator will organize regular solid waste and recycling waste reduction education programs for schools, local government and other interested groups. | No. |
| I7.1.2 | Funding | Apply to BC Environment for funds to assist in support in providing waste reduction education. | No. |
| I8.1 | Backyard Composters | Backyard composing will be encouraged and subsidized from time to time with funds provided by the Provincial Government and from the Recycling Reserve. | No. |
| I8.2 | Other Composting | ISWAC will encourage initiatives for commercial and backyard composting operations by providing information on composter design and operation. | No. |
| I9.1.1 | Problem Waste Recycling | When sufficient problem waste materials (Appendix I-3) have been accumulated (as determined by the Waste Coordinator funds may be withdrawn from the Recycling Fund to pay for the handling and shipping of recyclable materials. | No. |
| I9.1.2 | Problem Waste Coordinator | The Islands Coordinator will facilitate the proper disposal of problem wastes by :<br>a) being conversant with regulations governing the storage and haulage of special waste; and<br>b) referring persons to the responsible agency. The Islands Coordinator is to receive training in the storage and handling of problem waste. | To some degree. |

| | | | |
|---|---|---|---|
| I9.1.3 | General Recyling Support | 1SWAC shall encourage Recycling by providing information on nearest available recycling facilities and by providing grants to volunteer recycling groups from the Recycling Fund. | No recycling groups per se. The NCRD is largely coordinating recycling services on island. |
| I9.1.4 | Recyling Capital Expenditures | ISW AC will consider a capital grant from the Capital Fund towards the cost of recycling facilities, when it can be demonstrated that operation of such facilities will significantly reduce waste and to extend the life of the landfill, and/or that the originator has a viable marketing and transportation plan in place. | Yes this takes place. We most recently opened a recycling facility in Masset using some capital reserve funds to purcahse the needed equipment. https://www.ncrdbc.com/about-us/news-notices/village-masset-recycling-depot-opening-august-13-2021 |
| I9.1.5 | Public Subsidies | ISWAC will maintain and review Appendix 1-7, which lists all items that will be recycled with public subsidies. | Yes. Waste watcher's directories provided. |
| I9.1.6 | Recycling at Landfill and/or Transfer Stations | ISWAC will consider inviting interested parties to operate recycling facilities in specified areas at the Landfill and at transfer stations. Terms of operation will be determined by the Waste Coordinator in conjunction with the local collection contractor. | No. NCRD coordinatin recycling activities. |
| I9.1.7 | Salvage Rights | The landfill contractor shall have exclusive salvage rights at the Port Clements Regional Landfill and the local collection contractors shall have exclusive salvage rights at Transfer Stations that they are responsible for maintaining. | Yes. |
| I10.1.1 | Schedules | Implement the plan according to the schedules presented in Fig 9 | Yes - for the most part. |
| I10.1.2 | Responsibility | Responsibility for implementing various components of the plan will be according to Figure 10 | Yes. |
| I10.2.1 | Illegal Dumping | Encourage the public system contractors to report any incidents of illegal dumping to the appropriate jurisdiction. If Incident cannot be investigated in a timely manner by the appropriate jurisdiction, the coordinator will record the incident and forward a detailed report to the appropriate ministry. | Yes. |
| I10.2.2 | Strategies to Prevent Illegal Dumping | ISWAC will review incidents of illegal dumping and recommend the implementation of one or all of the following strategies:<br>1) publish photos of incidents;<br>2) identify the owners of the illegally dumped refuse and bill them for the proper disposal; and<br>3) the adoption of an illegal dumping bylaw with a schedule of fines for various infractions. | Not currently taking place. ISWAC not meeting. |
| I10.2.4 | Enforcement | ISWAC will apply for funding in BC Environment or any other jurisdiction that requires assistance from the Waste Coordinator to enforce their legislation. | No. |
| I10.3.1 | Public Comments | The Islands Coordinator will keep a record of all suggestions and comments from the public and will ensure that ISWAC is kept informed of this information. | Yes. |
| I10.3.2 | ISWAC Meetings | ISWAC will meet regularly, not less than quarterly, to review the operations of the Waste Management System and to consider comments from the public. Quarterly meetings will be advertised and open to the public. Meeting dealing with personnel, wages and contract matters may be closed. | No. |

| | | | |
|---|---|---|---|
| I10.3.3 | Special Meetings | Special public meetings will be held to consider major changes to this plan. | Yes - as needed and currently taking place. |
| I10.4 | Dispute Resolution | When disputes arise between any of participating communities, The Regional District and/or contractors hired to implement the system, it should be resolved by:<br>1 )ISW AC, which may refer the dispute to<br>2)Participating Regional District directors and any delegates they may choose to invite, who may refer the dispute to<br>3) the entire Regional District Board." | Yes - disputes in ISW service have not arisen during my tenure. |
| I10.5.1 | Funding Sources | Required funds are to be raised from (figure 11):<br>1) Property taxes ;<br>2) User charges from:<br>a) Quarterly unit fees<br>b) Volume based tipping fees<br>c) Bag tags; and<br>d) Special handling levies<br>3) Senior Government grants. | Yes. |
| I10.5.2 | Coordinator | Funding the cost of an Islands Waste Coordinator will be provided by a unit surcharge applied to the landfill operating fee. | Yes. |

# APPENDIX B
# Rate Schedules and Brochures

# NORTH COAST REGIONAL DISTRICT

# BYLAW NO. 669, 2020

## SCHEDULE "A" FEES & CHARGES

## COLLECTION SERVICE

| | | |
|---|---|---|
| User Fees per Dwelling | $28.00 | per month |
| Bag Tags | $ 2.00 | per tag |

## LANDFILL SITE:

### 1.) Tipping Fees

**a.) Residential (Household) Waste:**

| | | |
|---|---|---|
| Bagged | $ 2.00 | per bag |
| Small pickup with factory box less than 7feet | $ 7.00 | per load |
| Large pickup with factory box more than 7 feet | $12.00 | per load |
| Utility trailer with inner tire diameter less than 10 inches | $ 6.00 | per load |
| Utility trailer with inner tire diameter 10 inches or greater | $10.00 | per load |
| Tandem axle trailer | $30.00 | per load |
| If overloaded; an additional | $ 5.00 | per load |
| Single axle 1- ton truck or greater | $45.00 | per ton capacity |

**b.) Commercial Waste** $15.00 per cubic meter

**c.) Construction and Demolition Waste** $25.00 per cubic meter

**d.) Controlled Waste**

| | | |
|---|---|---|
| Contaminated soils | $25.00 | per cubic meter |
| Bulky waste | $25.00 | per cubic meter |
| Food processing waste | $25.00 | per cubic meter |
| Asbestos | $65.00 | per cubic meter |
| Creosoted/Treated Wood | $65.00 | per cubic meter |

### 2.) Recycling

| | | |
|---|---|---|
| Appliances w/o CFC (no Freon) | $ 5.00 | each |
| Appliances with CFC (fridges etc.) | $25.00 | each |

| | | |
|---|---|---|
| Small Appliances | Free | |
| Empty 171 liter drums (45 gallon) | $ 5.00 | each |
| Empty tanks over 171 liters (>45 gal.) | $10.00 | per cubic meter |
| Propane tanks 25lbs or less | $ 2.50 | each |
| Propane tanks over 25lbs to 100lbs | $ 5.00 | each |
| Tires under 16 inches no rim | $ 4.00 | per tire |
| Tires over 16 inches to 24.5" | $ 8.00 | per tire |
| Any tire with rim not over 24.5" | $12.00 | per tire |
| Oversize tires (over 24.5") | $20.00 | per tire |
| Vehicle hulks stripped (no oils/battery/tires) | $75.00 | per vehicle |
| Vehicle hulks with fluids | $150.00 | per vehicle |
| Lead acid batteries | Free | |
| Paint products | Free | |
| Waste oil/ filters/ containers | Free | |
| Sorted Metals | $10.00 | per cubic meter |

## TRANSFER STATIONS:

### 1. Tipping Fees

a.) **Residential (Household) Waste:**

| | | |
|---|---|---|
| Bagged | $ 2.00 | per bag |
| Small pickup with factory box less than 7feet | $10.00 | per load |
| Large pickup with factory box more than 7 feet | $15.00 | per load |
| Utility trailer with inner tire diameter less than 10 inches | $ 9.00 | per load |
| Utility trailer with inner tire diameter 10 inches or greater | $13.00 | per load |
| Tandem axle trailer | $32.00 | per load |
| If overloaded; an additional | $ 5.00 | per load |
| Single axle 1- ton truck or greater | $50.00 | per ton capacity |

b.) **Commercial Waste** **Not accepted at Transfer Stations**

| | | |
|---|---|---|
| Exception – Under provision of a separate agreement | $25.00 | per cubic meter |

c.) **Construction and Demolition Waste** **Not accepted at Transfer Stations**

d.) **Controlled Waste** **Not accepted at Transfer Stations**

### 2. Recycling

| | | |
|---|---|---|
| Appliances w/o CFC (no Freon) | $10.00 | each |
| Appliances with CFC (fridges etc.) | $30.00 | each |
| Small Appliances | Free | |
| Empty 171 liter drums (45 gallon) | $10.00 | each |
| Empty tanks over 171 liters (>45 gal.) | $25.00 | per cubic meter |

| | | |
|---|---|---|
| Propane tanks 25lbs or less | $ 5.00 | each |
| Propane tanks over 25lbs to 100lbs | $10.00 | each |
| Tires under 16 inches no rim | $ 5.00 | per tire |
| Tires over 16 inches to 24.5” | $10.00 | per tire |
| Any tire with rim not over 24.5” | $15.00 | per tire |
| Oversize tires (over 24.5”) | $25.00 | per tire |
| Vehicle hulks stripped (no oils/battery/tires) | **Not accepted at Transfer Stations** | |
| Vehicle hulks with fluids | **Not accepted at Transfer Stations** | |
| Lead acid batteries | $ 5.00 | per battery |
| Paint products | Free | |
| Waste oil/ filters/ containers | Free | |
| Sorted Metals | $10.00 | per cubic meter |

## RECYCLING DEPOTS AND RECYCLING COLLECTION

1. **Commercial Recycling Fees**

| | | |
|---|---|---|
| Bagged | $ 2.00 | per bag |
| Small pickup with factory box less than 7feet | $10.00 | per load |
| If overloaded, an additional | $5.00 | per load |
| All other | $10.00 | per cubic meter |

2. **Commercial Recycling Pickup Service** (Where available) $20.00 per pickup
   *Up to two (2) Regional District provided bags

# Schedule "F"
# Solid Waste Management Bylaw No. 3480, 2021

## FEES AND CHARGES

**All fees, rates, and charges in this Schedule include a 2% Asset Management Reserve Fee**

| | 2022 | 2023 | 2024 |
|---|---|---|---|
| **CITY COLLECTION FEES** | | | |
| | | | |
| **Residential Collection Service** | | | |
| Per dwelling unit, minimum **annual** charge for collection of solid waste | $518.04 | $528.40 | $538.97 |
| Per dwelling unit, additional **annual** charge for 240L refuse collection | $100.00 | $102.00 | $104.04 |
| Per dwelling unit for single Owner/Strata with >20 dwellings **quarterly** charge for collection of solid waste | $129.51 | $132.10 | $134.74 |
| **Commercial Collection Service** | | | |
| Minimum **quarterly** charge for two (2) containers picked up twice per week. | $399.32 | $407.31 | $415.46 |
| Charge for each additional garbage bag above four (4) | $11.02 | $11.24 | $11.46 |
| | | | |
| **Container Fees (per sections 3.7, 3.8, and 5.10)** | | | |
| Initial fee for 120 and 240 litre containers delivered in 2021 | $20.00 | | |
| Exchange fee to change 120 litre to 240 litre container or vice versa | $10.00 | $10.20 | $10.40 |
| Repair of container wheels, handle, or lid | $25.00 | $25.00 | $25.00 |
| Replacement of 120 litre container | $50.00 | $50.00 | $50.00 |
| Replacement of 240 litre container | $70.00 | $70.00 | $70.00 |
| **Specific Penalties (per sections 12.5 and 12.6)** | | | |
| Failure to use approved *container* for curbside collection of *solid waste* | $50.00 | $50.00 | $50.00 |
| Overfilling of *containers* beyond lid height causing materials to spill | $50.00 | $50.00 | $50.00 |
| Placement of contaminating materials in *curbside recycling containers* | $50.00 | $50.00 | $50.00 |
| Minimum charge for cleanup on City property | $150.00 | $150.00 | $150.00 |

| | | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| **USE OF DISPOSAL SITE – CASH RATES** | | | | |
| Fees for disposing of waste at the Disposal Site is measured by weight (tonne) on the scale provided at the site unless otherwise stated. All rates are per tonne unless otherwise stated. Cash rates include debit and credit cards. | | | | |
| **General Waste Disposal** | | | | |
| Regular Tipping Fees | Resident | $175.00 | $179.00 | $183.00 |
| | Minimum | $6.00 | $8.00 | $10.00 |
| | Non-Res | $245.00 | $250.00 | $255.00 |
| | Minimum | $11.00 | $11.00 | $12.00 |
| Temporary Worker's Residence (upon approval) | Resident | $447.00 | $456.00 | $465.00 |
| | Non-Res | $625.00 | $638.00 | $651.00 |
| **Controlled Waste Weekdays** | | | | |
| Non-processed fish waste | Resident | $588.00 | $600.00 | $612.00 |
| | Non-Res | $824.00 | $840.00 | $857.00 |
| Non-contaminated Water Waste (upon approval) | Resident | $220.00 | $224.00 | $228.00 |
| | Non-Res | $308.00 | $314.00 | $320.00 |
| Liquid Waste and Sludge includes sewage | Resident | $72.50 | $74.00 | $75.50 |
| | Non-Res | $109.00 | $111.20 | $113.40 |
| Waste that requires immediate burial | Resident | $414.00 | $422.00 | $430.00 |
| | Non-Res | $580.00 | $592.00 | $604.00 |
| **Controlled Waste Weekends/Holidays** | | | | |
| Regular tipping fees plus additional charge of: | Resident | $428.00 | $437.00 | $446.00 |
| | Non-Res | $601.00 | $613.00 | $625.00 |
| Any Controlled Waste without a specified disposal charge shall be charged the general disposal rate for the particular site (General or Recycle) that is directed to by staff | | | | |
| **Non Operational Scale Fees** | | | | |
| In the event that the Landfill Site scales provided are not operational, all solid waste delivered to the Landfill Site shall be subject to the following charges, according to the type of vehicle delivering the waste and without taking into consideration the volume or weight of the waste contained in the vehicle. | | | | |
| Standard size garbage bags up to 6 bags | Resident | $8.10 | $8.30 | $8.50 |
| | Non-Res | $11.50 | $11.70 | $11.90 |
| Automobiles including cars, vans, SUVs, small trucks and single axle trailer with tire inner diameter of less than 10" (25 cm) | Resident | $12.80 | $13.10 | $13.40 |
| | Non-Res | $17.90 | $18.30 | $18.70 |

| | | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| **Non-Operational Scale Fees Continued** | | | | |
| Tandem trailer with sides more than 1 metre (3 ft) | Resident | $36.40 | $37.10 | $37.80 |
| | Non-Res | $50.40 | $51.40 | $52.40 |
| One (1) ton units | Resident | $39.60 | $40.40 | $41.20 |
| | Non-Res | $53.90 | $55.00 | $56.10 |
| Single axle dump truck | Resident | $478.00 | $487.60 | $497.40 |
| | Non-Res | $670.10 | $683.50 | $697.20 |
| Tandem dump truck | Resident | $783.10 | $798.80 | $814.80 |
| | Non-Res | $1,098.40 | $1,120.40 | $1,142.80 |
| Single axle side load 20 yd Refuse Truck (low compaction) | Resident | $839.60 | $856.40 | $873.50 |
| | Non-Res | $1,177.50 | $1,201.10 | $1,225.10 |
| Single axle side load 20 yd Refuse Truck (mid-high compaction) | Resident | $1,351.50 | $1,378.50 | $1,406.10 |
| | Non-Res | $1,891.60 | $1,929.40 | $1,968.00 |
| Tandem side load 30 yd Refuse Truck (mid-high compaction) | Resident | $1,683.70 | $1,717.40 | $1,751.70 |
| | Non-Res | $2,354.90 | $2,402.00 | $2,450.00 |
| Front load Refuse Truck | Resident | $1,432.80 | $1,461.50 | $1,490.70 |
| | Non-Res | $2,005.80 | $2,045.90 | $2,086.80 |
| Roll on/off Tandem with open container | Resident | $980.80 | $1,000.40 | $1,020.40 |
| | Non-Res | $1,373.00 | $1,400.50 | $1,428.50 |
| Roll on/off Tandem with compactor style container | Resident | $1,544.70 | $1,575.60 | $1,607.10 |
| | Non-Res | $2,164.00 | $2,207.30 | $2,251.40 |
| **USE OF RECYCLABLE SITE – CASH RATES** | | | | |
| Recycling under one tonne – minimum charge | Resident | $5.00 | $5.00 | $5.00 |
| | Non-Res | $7.00 | $7.00 | $7.00 |
| Recycling above one tonne | Resident | $17.10 | $17.40 | $17.70 |
| | Non-Res | $23.60 | $24.10 | $24.60 |
| Muskeg | Resident | $55.00 | $56.10 | $57.20 |
| | Non-Res | $77.00 | $78.50 | $80.10 |
| Automobiles for recycling as authorized | Resident | $55.10 | $56.20 | $57.30 |
| | Non-Res | $75.90 | $77.40 | $78.90 |
| **OTHER LANDFILL SITE CHARGES – CASH RATES** | | | | |
| Use of Scale (per use) | Resident | $31.20 | $31.80 | $32.40 |
| | Non-Res | $41.90 | $42.70 | $43.60 |
| Clean Cover Material per load | Resident | $31.20 | $31.80 | $32.40 |
| | Non-Res | $41.90 | $42.70 | $43.60 |
| Grain and Sand (as authorized) | Resident | $155.00 | $158.10 | $161.30 |
| | Non-Res | $217.00 | $221.30 | $225.70 |
| Disposal of Controlled Waste or Prohibited Waste without prior approval (per item). This fee will be added to the general tipping fees. | Resident | $660.00 | $670.00 | $680.00 |
| | Non-Res | $930.00 | $950.00 | $970.00 |

| UNCOVERED OR INSECURE LOADS |
| --- |
| General Waste Disposal fees will be doubled when Commercial Vehicles attend the disposal site with an uncovered or an insecure load. |
| **NON-PROFIT ORGANIZATIONS FEE** |
| Non-profit groups may apply to have a 50% reduction in their landfill tipping fees to a maximum of $3,000 annually when authorized by the *Director of Operations* or their designate. This approval must be granted prior to attending the disposal site. Any other requests for financial assistance must be directed to City Council. |
| **INVOICE RATES – LANDFILL SITE** |
| Invoice rates will be 12% higher than the cash rate identified in this Schedule. |
| **BILLING AND EARLY PAYMENT REWARD** |
| Accounts paid in full by the due date on the Billing Statement may be entitled to receive a ten percent (10%) reduction. Any payments received after the close of business day at Prince Rupert City Hall on the due date are not eligible for the discount. Payments made at a Financial Institution must be received by the City on or before the application due dates in order for the customer to qualify for the discount. Non receipt of the utility bill will not be recognized as a valid excuse for failure to pay the rates when due. Early payment reductions do not apply to fees charged under the Container Fees and Specific Penalties categories described above. |
| **UNPAID FEES AND CHARGES** |
| Any amounts imposed under this Schedule remaining unpaid on the thirty-first (31st) day of December in any year shall be deemed to be taxes in arrears in respect of the parcels of land concerned and such sums shall be recovered with interest, in the same manner as ordinary municipal taxes upon land in accordance with the applicable provisions of the Community Charter and Local Government Act. Furthermore, these accounts will also be subject to a late fee of ten percent (10%). |

# Prohibited Materials

The following items are **NOT ACCEPTED** at the Prince Rupert Landfill. Please use the local recycling options provided.

Contact the appropriate facility directly for hours of operation, disposal requirements, and any applicable fees .

**Batteries (Vehicle & Household)**

**Fluorescent Compact Bulb & Tube Lights**

**Solvents, Household & Marine Paint, Pesticides, Gasoline & Containers**

**Home Electronics Including: Computers, Monitors, TV's, Printers.**

**Small Home Appliances Including: Microwaves, Vacuums, Water Coolers, Dehumidifiers, Oil Heaters.**

**White Goods (Major Home Appliances) Including: Fridges, Freezers, Ovens, Ranges, Washing Machines, Dryers, Dishwashers, Air Conditioners, Furnaces, Hot Water Tanks.**

NCRD Recycle Depot
www.sqcrd.bc.ca
251 Kaien Road
(250) 624 - 2455

**Tires:**

Return to store of purchase

NCRD Recycle Depot
– for passenger vehicle tires
251 Kaien Road
(250) 624 - 2455

Kal Tire – for all tires including commercial & industrial
943 Chamberlin Ave
(250) 624 - 8550

(CONTINUED ON BACK OF PAMPHLET)

# Prohibited Materials

(CONTINUED FROM PREVIOUS PAGE)

**Used Outdoor Power Equipment Including: Lawnmowers, Snow Blowers, Power Saws, Weed Trimmers, Pressure Washers.**

Sea Sport Marina
www.opeic.ca
295 – 1st Ave E
(250) 624 - 5337

**Used Oil & Filters & Containers / Used Antifreeze & Containers:**

Any automotive repair shop
(please call first to confirm)
www.bcusedoil.com

**Propane Cylinders :**

Coastal Propane
170 George Hills Way
(250) 624-5011

- **Creosote Treated Wood & Railway Ties**

***Any items that are not listed in this brochure and have been deemed recyclable will not be accepted at the Prince Rupert Landfill site**

## Contact + Hours of Operation

Monday – Friday: 8:30 am – 4:45 pm
Saturday: 10:00 am – 3:45 pm
Sundays & Statutory Holidays: CLOSED

**Landfill Contact Information**
Location: 500 Ridley Island Road
**Phone:** 250-624-5482 or 250-624-4307
**Fax:** 250-624-4348
**Email:** princerupert.landfill@princerupert.ca

# PRINCE RUPERT
# LANDFILL

Guide for permissible materials and fees at the Prince Rupert Landfill Site

CITY OF PRINCE RUPERT
INCORPORATED MARCH 10, 1910

# 2020 Fees and Charges

| Material | 'RESIDENT' Rates Cash/Credit Card/ Debit | Invoiced Rates |
|---|---|---|
| **General Refuse** | $148.90 / tonne | $166.80 / tonne |
| **Automobiles (for disposal)** | $46.80 / tonne | $50.95 / tonne |
| **Recyclable Material** | $14.50 / tonne ($3.00 minimum) | $16.20 / tonne ($3.00 minimum) |
| Asphalt | " | " |
| Concrete | " | " |
| Metal | " | " |
| Rock | " | " |
| Clean Wood (unfinished/no plywood) | " | " |
| Yard Waste | " | " |
| Fill (muskeg) | " | " |
| **Liquid Waste** | $9.50 / tonne | $10.60 / tonne |
| **Grain** | $26.50 / load | $29.70 / load |
| **Cover** (dry mineral soil) | $26.50 / load | $29.70 / load |
| | | |
| **The following products (*) require immediate burial; approval for each load must be obtained in advance** | | |
| *** Asbestos** | $351.90 / tonne | $382.70 / tonne |
| *** High Risk** | " | " |
| *** Animals** | " | " |
| *** International Refuse** | " | " |
| *** Commercial Fish Waste** | $499.80 / tonne | $559.80 / tonne |
| | | |
| **Scale Use (printed receipt)** | $26.50 ea | $29.70 ea |
| **After Hours Administration Fee** | $365.15 ea | $365.15 ea |
| **White Goods Fee (major appliances)** | $550.00 ea | $550.00 ea |
| **Prohibited Waste / Excess Cardboard** | $550.00 ea | $550.00 ea |
| **Improperly Secured Load & Excess Cardboard Fines** | Disposal fees are doubled | Disposal fees are doubled |

- Prices listed are per tonne (1000 kg) unless otherwise specified.
- There is a $3.00 minimum charge for all products.
- No 3rd party billing.
- All charges for waste being disposed of at the Prince Rupert Landfill site are calculated from vehicle weights measured on the Landfill scale.
- **Any material originating outside of the City of Prince Rupert municipal boundary is subject to an additional 40% Non-Resident surcharge.**
- A Landfill account for commercial clients can be arranged by the Customer Service Department located at Prince Rupert City Hall. If a commercial Landfill account remains up to date, a 10% discount is applied. A $20.00 minimum invoice charge applies to all accounts.
- We accept Cash, Cheques, Debit card and all major Credit Cards (Visa, MasterCard, American Express).

## Waiver Forms

Waiver forms are available for:

- Customers requiring assistance in removing boats or other vehicles from trailers
- Customers requiring assistance in removing refuse loads that become lodged in a vehicle
- Customers requiring assistance when their vehicle becomes stuck onsite

By signing the waiver form, the signatory releases the City from all liability for damage that may occur when Landfill Staff use Landfill Heavy Equipment to assist them.