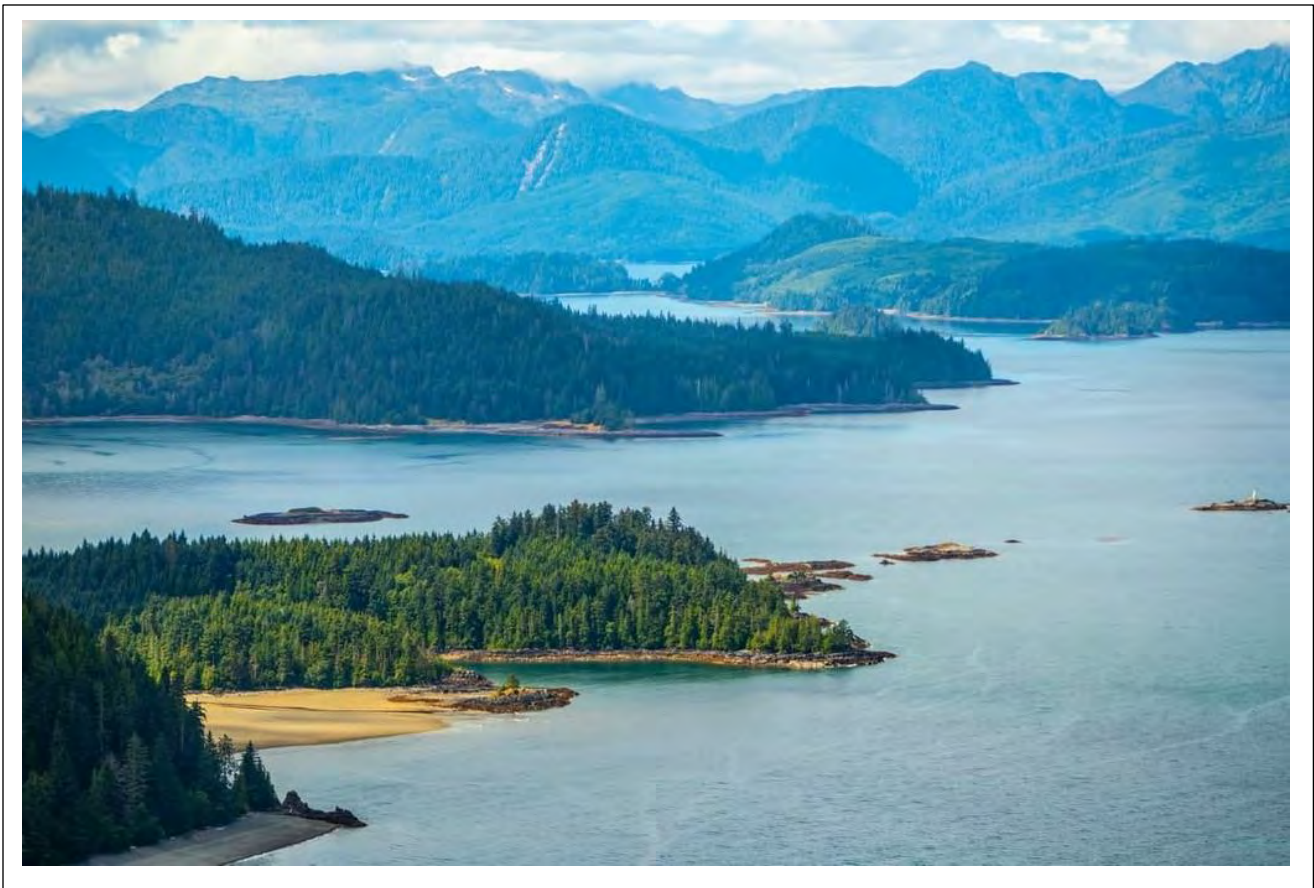


# **SOLID WASTE MANAGEMENT PLAN UPDATE**



## **DRAFT2 Solid Waste Management Plan**

**June 15, 2023**

**Submitted by: Sperling Hansen Associates**

**Revisions:** For release to Round 2 Public Consultation & Engagement – July 11, 2023

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## EXECUTIVE SUMMARY

In British Columbia, regional districts develop solid waste management plans (SWMPs) under the provincial *Environmental Management Act*. This plan update of the 1996 original plan, provides a long-term vision of how the North Coast Regional District (NCRD) intends to manage its solid waste services. The Plan will guide the solid waste management activities and policy development for the next five to ten years.

For this Plan, the items addressed are:

1. Improve regular examination of each solid waste management service so that they can be refined and modified as necessary to improve efficiency.
2. Implement an advisory committee to assist with managing the Island Solid Waste Service.
3. Improve waste diversion by prohibiting materials from disposal that have an alternative use or can be recycled under a viable and sustainable program (e.g. EPR).
4. Update waste management bylaws.
5. Dedicate time and resources to waste reduction communication and education in the region.
6. Optimize residential and commercial diversion of recyclables and reuse items.
7. Manage use of single-use items such as plastic grocery bags, take-out containers.
8. Divert organics such as food, yard waste and clean wood that are an estimated 25% of the waste stream from the residential and commercial sectors.
9. Improve management of hazardous waste and problem waste.
10. Implement an illegal dumping management strategy.
11. Optimize programs and facilities to ensure financial sustainability.

This plan provides strategies, actions and a sustainable financial approach to address these objectives.

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## ACRONYMS AND ABBREVIATIONS

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	Island Landfill
ISWAC	Island Solid Waste Advisory Committee
ISWM	Island 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

## 1.0 INTRODUCTION

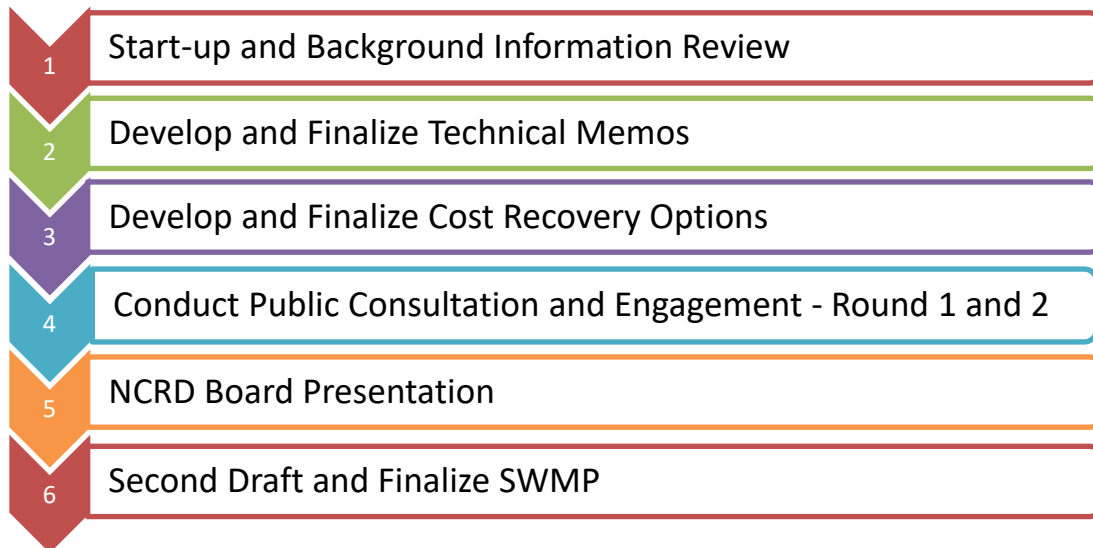
The North Coast Regional District (NCRD) is in the process of developing a new Solid Waste Management Plan (SWMP). The plan will guide the NCRD solid waste management services over the next five to ten years, providing direction on waste collection, waste disposal, recycling, waste reduction and service cost recovery. SWMPs are required for all regional districts in British Columbia under the Environmental Management Act (EMA). NCRD's 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 smaller, 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 completed the first step of the process by initiating the planning process and establishing a Public and Technical Advisory Committee (PTAC) who met twice prior to hiring a consulting firm to help the NCRD step through the rest of the process. The PTAC developed the consulting budget and compiled a list of topics to consider. Step 2 was completed by the consultant, NCRD staff and the PTAC through development and review of four technical memorandums by the PTAC in four more meetings and by the Board of Directors in two regular meetings. The memorandums attached as Appendices C, D, E and F were working documents that remain in their original approved state even as additional and more accurate information came to light. Any new information or clarifications are included in the SWMP.



## 1.1 The Plan Update Process

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**

Tasks greyed out above have been completed and tasks Round 2 of Task 4 to 6 are planned to be completed by November 2023.

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:

- (a) Identify principles, goals and targets
- (b) Prepare background information
- (c) Assess the current solid waste management system
- (d) Consider trends affecting solid waste management
- (e) Consult the public

Step 3:

- (a) Develop potential strategies
- (b) Assess the financial and administrative implications

(c) Consult the public and interested parties on the options.



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

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

- Technical Memo 1: System Overview and Waste Diversion
- Technical Memo 2: Residuals Management
- Technical Memo 3: Cost Recovery
- Technical Memo 4: Service Review.

Task 3 of SHA’s scope of work, Develop and Finalize Cost Recovery Options, has been reassessed by NCRD staff and will be completed internally by the NCRD when the Final SWMP is presented to the Board of Directors.

Still part of the Guide’s Step 3, and prior to moving into Step 4 of the SWMP development process, this second draft of the SWMP update will be presented to the NCRD Board of Directors before it is taken to the public for the second round of consultation as per the PTAC adopted Public Consultation Plan attached in Appendix A.

## 2.0 CONTEXT AND SCOPE

This Second Draft SWMP Report compiles the content of Technical Memos 1, 2, 3 and 4 for presentation to the public and stakeholders for input prior to finalization of plan strategies in the Final SWMP. Along with a comprehensive overview of the NCRD's current waste management system, this Second Draft SWMP Report provides the following:

- (a) A review of the NCRD's waste management principles, goals and targets
- (b) A detailed description of the Plan Area
- (c) Current diversion programs and the status of the 1996 SWMP including the initiatives that will not be carried through to the updated SWMP
- (d) 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 related to waste diversion, residuals management and costs
- (e) Existing diversion strategies and tools
- (f) Diversion opportunities for the NCRD to consider by sector: Residential, Industrial Commercial and Institutional (ICI) and Construction, Renovation and Demolition (CRD) waste
- (g) Current refuse collection and disposal programs, facilities, capacity and associated quantities managed
- (h) Residuals management initiatives
- (i) Current solid waste management system costs
- (j) Solid waste management system cost controls and recovery.

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 stakeholders and interested parties, and documents provided by the NCRD.

### 2.1 Principles, Goals and Targets

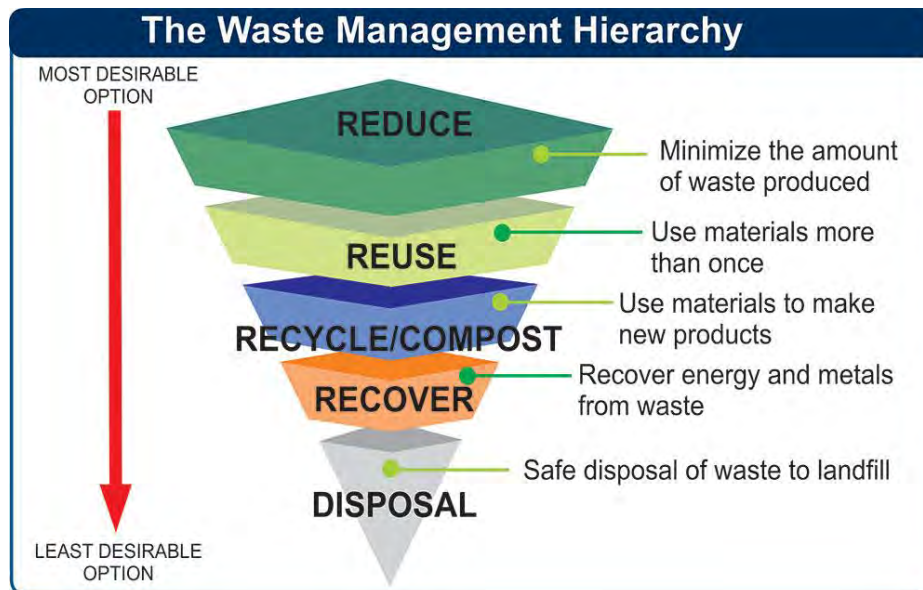
With amendments to the *Waste Management Act* (now *Environmental Management Act*) in 1989 the province required all Local Governments to develop a SWMP for approval by 1995 that would help British Columbia (BC) achieve a 50% reduction in municipal solid waste (MSW) disposal by the year 2000. As stated 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 original 137 initiatives. The list of initiatives is presented in Appendix B with the following color coding:

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

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

- (a) BC’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
- (b) 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
- (c) A growing number of product stewardship programs exist in BC to take responsibility for end-of-life product management
- (d) Private sector innovation is playing a progressively significant role in the collection and management of waste
- (e) “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
- (f) 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).

## 2.2 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 the private sector.

## **2.3 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 can be found on the ENV website and are adjusted from time to time to reflect current

realities and public expectations. Setting local targets that are achievable, time-bound and demonstrate continuous improvement over time are recommended.

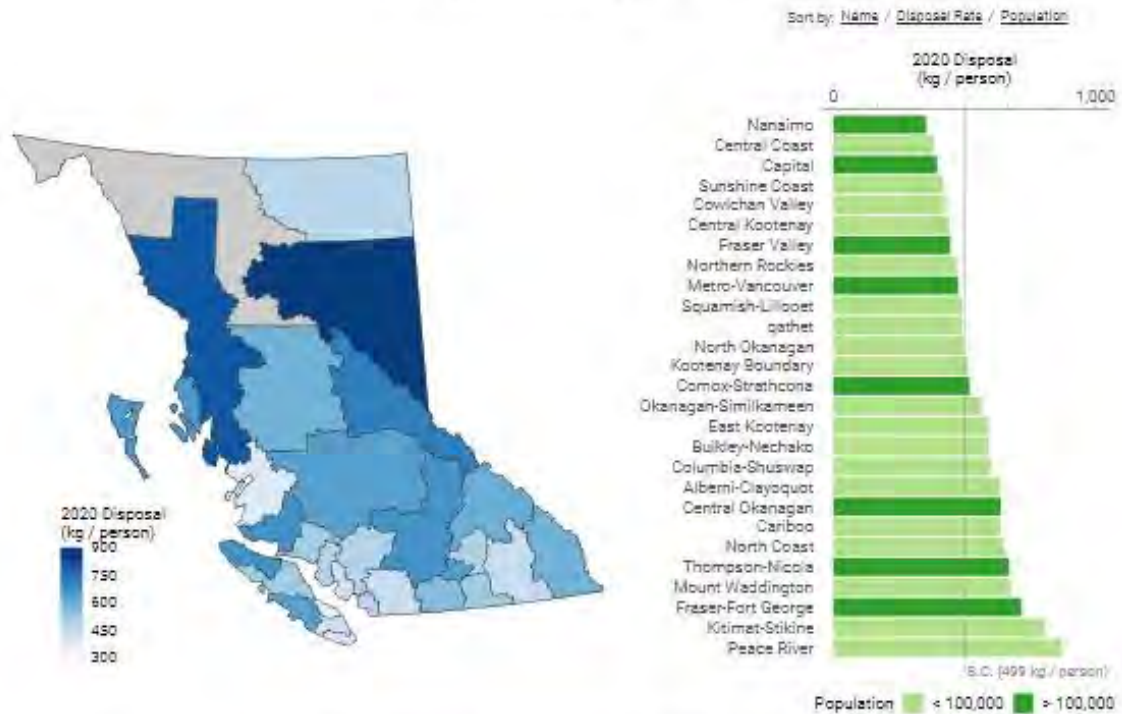
The ENV's current Service Plan outlines the following provincial targets for 2022 to 2025:

**Table 1 - Provincial Service Plan Disposal Targets**

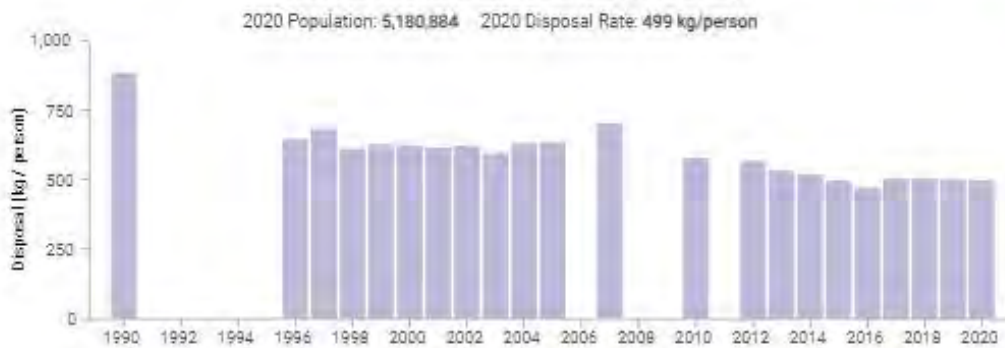
Target	2022/2023	2023/2024	2024/2025
Per capita municipal solid waste disposal (kg per person)	460	460	440
Per cent of population covered by an organic waste disposal restriction (%)	80	80	80

ENV collects disposal data from regional districts in BC on an annual basis through their Disposal Calculator program (refer to Figure 4 below). 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.

### 2020 Regional District Disposal Rates



### Disposal Rates in British Columbia (1990-2020)



**Figure 4: Disposal Rate**

The NCRD reported their MSW disposal rate to the Province in 2020 to be 652 kg per person per year compared to the provincial average of 499 kg in 2020. The 2021 disposal quantity is reported to be 12,894 tonnes. With a 2021 population of 18,181 based on the 2021 Census the current NCRD disposal rate is estimated to be **710 kg per person per year**; a 9% increase.



## 2.4 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 and key issues:

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 and sustainability 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. Continuing to consider the importance of convenience for solid waste management programs, services and facilities
  - h. Developing a strategy to reduce single use items
  - i. Developing a food waste reduction strategy
  - j. Improving recycling collection in the Mainland and Island Solid Waste Service Areas
  - k. Developing options for compost collection and organics processing in both Service Areas
  - l. Expanding the list of prohibited wastes at disposal sites
  - m. Collecting household hazardous waste
  - n. Outlining possible solutions for removing scrap vehicle stockpiles from the Islands Landfill
  - o. Enhancing and enforcing solid waste source control for the Industrial, Commercial and Institutional (ICI) sector
  - p. 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 finalizing the SWMP.

## 2.5 Plan Area

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

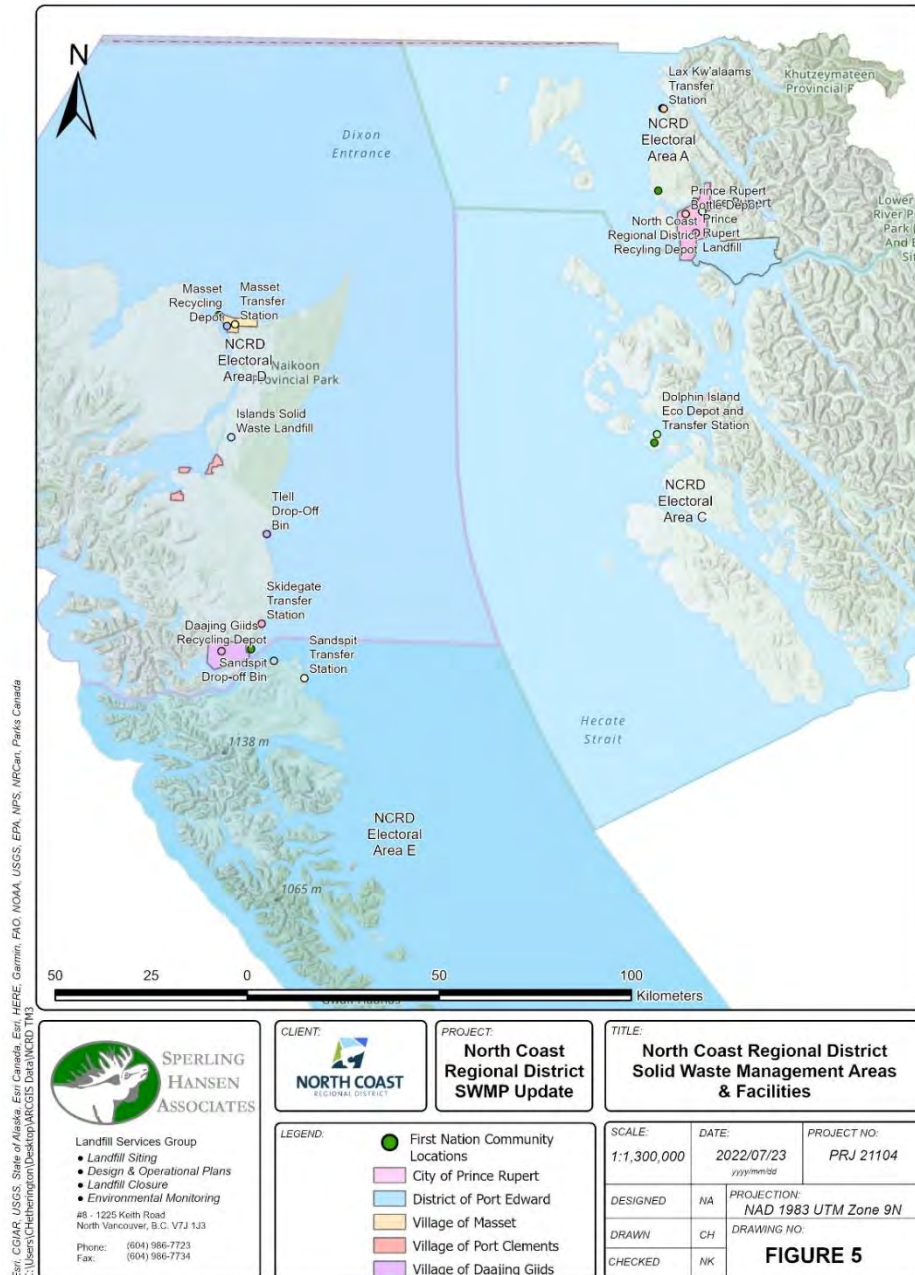


Figure 5: NCRD Solid Waste System Overview

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 operated under the 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.

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

Municipal Jurisdictions	2021 Census	Total Dwellings	Dwellings Occupied by Year Round Residents
<b>NCRD**</b>	<b>18,181</b>	<b>9,082</b>	<b>7,661</b>
Island	3,256	1,869	1,559
Village of Masset	838	518	399
Village of Port Clements	340	205	181
Village of Daajing Giids	964	574	488
Electoral Area D	580	327	254
Electoral Area E	325	251	161
Mainland	12,770	5,954	5,253
City of Prince Rupert	12,300	5,747	5,072
District of Port Edward	470	207	181
Electoral Area A	45	46	29
Electoral Area C	31	72	17
First Nations Jurisdiction (included in NCRD total above)	2021 Census	Total Dwellings	Dwellings Occupied by Year Round Residents
Lax Kw'alaams 1 *EA-A	627	316	216
S1/2 Tsimpsean 2 (2016) [Metlakatla] *EA-A	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
Masset 1 (Old Massett - Haida) *EA-D	838	241	195
Skidegate 1 *EA-D	697	331	296
<b>Total</b>	<b>2,669</b>	<b>1,140</b>	<b>881</b>

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

\*\* Data is direct from Census tables and is not additive in this table

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.*

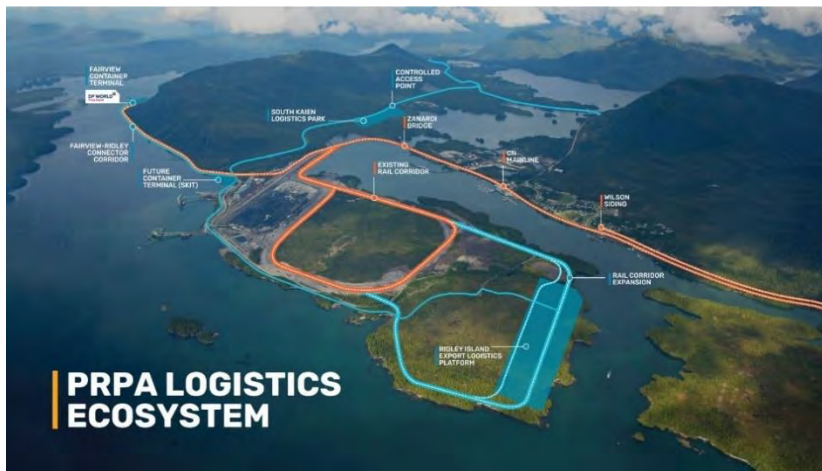
**Fairview Container Terminal Expansion:** *To maximize the opportunity for gateway growth, work is now underway on DP World Prince Rupert's Phase 2B Stage 1A (P2BS1A) project, with plans to deliver Phase 2B Stage 1B (P2BS1B) shortly thereafter. In combination, these two stages will yield an expanded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



**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.



**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 Liquefied 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.*

## 2.6 1996 SWMP

As mentioned above, the NCRD has completed many of the original initiatives from its first SWMP and many are underway. The following table provides the list of initiatives as shown in Appendix B that are both In Progress and Not Complete. The initiatives were assessed to carry forward to the Second Draft SWMP. The initiative number refers to Mainland (M) and Island (I) and the associated initiative from the list. The text has been modernized. The status after review by the NCRD staff and PTAC of these initiatives is shown in blue text.

**Table 3: 1996 SWMP Carry Forward Initiatives**

1996 SWMP Initiative & Number	Initiative Description and Status
M2.1.3  Use of Tag Fees	Encourage the City of Prince Rupert and the District of Port Edward to use curbside garbage collection extra bag tags that residents must pay extra for in 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.  <i>Not assessed for SWMP Review but will be kept as an initiative going forward combined with Initiatives R-2 and R-4</i>
M2.1.6  Special Waste List Review	MSWAC shall review Special Waste List - Appendix 4 - annually and recommend changes to the Regional District Board and its member municipalities.  <i>Combined with Initiatives A-7 and R-7</i>
M4.1.1  Backyard Composters	Backyard composting will be encouraged and subsidized from time to time with funds provided by the Provincial Government and from levy assessed from property taxes from the Mainland area.  <i>Combined with Initiative R-6</i>
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 First Nations within the Mainland area, the Haida Gwaii and, if necessary, communities within the Kitimat-Stikine Regional District.  <i>Combined with Initiative R-6</i>
M6.4.1  Transfer Permit	Consider transfer of the waste management operation permit for the Prince Rupert landfill facility to the North Coast (Skeena-Queen Charlotte) Regional District.  <i>Added to Section 5.0 Goals and Strategies; Initiative RM-8</i>

1996 SWMP Initiative & Number	Initiative Description and Status
M8.2.2 Anti-Dumping Bylaws	<p>Encourage the City of Prince Rupert and the District of Port Edward to harmonize 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.</p> <p>Combined with Initiative RM-4</p>
M8.2.4 Funding Assistance	<p>MSWAC will apply for funding to ENV or any other jurisdiction that will assist in the enforcement of their legislation.</p> <p>Combined with Initiative A-4</p>
I1.1.3 Island Committee	<p>A permanent Waste Management Islands Committee be established with representation from Electoral Area D, Electoral Area E, the Village of Daajing Giids, Village of Masset, Village of Port Clements, Old Massett, Skidegate and representatives from environmental organizations, to be responsible for administering the Island Solid Waste System. (Appendix I-I)</p> <p>Combined with Initiative A-4</p>
I4.1.1 Transfer Station Sites	<p>Provide facilities open to the general public during hours in Appendix 4 at the following locations (figure 8):</p> <ol style="list-style-type: none"> <li>1) Masset Transfer Station</li> <li>2) Port Clements Regional Landfill [Islands Landfill]</li> <li>3) Skidegate Transfer Station</li> <li>4) Sandspit Transfer Station</li> </ol> <p>Combined with Initiatives A-1 and A-3</p>
I4.1.4 Maintenance	<p>Maintenance of the transfer stations (as specified in Appendix I-5) is to be part of the contract awarded for local collection.</p> <p>Combined with Initiative RM-1</p>
I4.1.6 Problem Waste Storage	<p>Storage areas will be designated for the temporary storage of auto hulks, tires and white goods at all transfer station sites.</p> <p>Combined with Initiative RM-3 with auto hulks only stored at the Islands Landfill and the Sandspit Transfer Station</p>
I4.1.8 Wood Waste	<p>Burning areas for clean 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.</p> <p>This is an ongoing practice already except for at the Masset Transfer Station where burning is prohibited due to the close proximity to the Masset Airport</p>

1996 SWMP Initiative & Number	Initiative Description and Status
14.2.1 Use of Fees	Fees collected shall be applied in accordance with Appendix I-3  Bylaws will be updated as part of the SWMP update project
15.1.2 Hours	A schedule of hauling hours will be established by the contractor and the landfill operator to minimize cover requirements at the landfill. This schedule is to be reviewed on an ongoing basis by the Island Coordinator.  Combined with system efficiency initiative, A-1
15.2.1 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.  Combined with system efficiency initiative, A-1
16.1.7 Problem Waste List Review	ILSWAC shall review Appendix I-3 annually and recommend changes to the Regional District Board.  Combined with Problem Waste Initiative, RM-3
17.1.2 Funding	Apply to ENV for funds to assist in support in providing waste reduction education.  Combined with funding initiative R-1
18.1 Backyard Composters	Backyard composting will be encouraged and subsidized from time to time with funds provided by the Provincial Government and from the Recycling Reserve.  Combined with organics diversion initiative, R-6
18.2 Other Composting	ISWAC will encourage initiatives for commercial and backyard composting operations by providing information on composter design and operation.  Combined with organics diversion initiative, R-6
19.1.1 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.  Set up reserve specific for problem waste removal, RM-3



1996 SWMP Initiative & Number	Initiative Description and Status
I9.1.2  Problem Waste Coordinator	The Island Coordinator will facilitate the proper disposal of problem wastes by : a) being conversant with regulations governing the storage and haulage of special waste; and b) referring persons to the responsible agency. The Island Coordinator is to receive training in the storage and handling of problem waste.  <a href="#">Combined with Waste Reduction Coordinator initiative, R-1</a>
I9.1.3  General Recycling Support	ISWAC shall encourage Recycling by providing information on nearest available recycling facilities and by providing access to designated recycling facilities on Haida Gwaii.  <a href="#">Combined with Waste Reduction Coordinator initiative, R-1</a>
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 and EPR programs.  <a href="#">Combined with Waste Reduction Coordinator initiative, R-1</a>
Strategies to I10.2.2  Prevent Illegal Dumping	ISWAC will review incidents of illegal dumping and recommend the implementation of one or all of the following strategies: 1) publish photos of incidents; 2) identify the owners of the illegally dumped refuse and bill them for the proper disposal; and 3) the adoption of an illegal dumping bylaw with a schedule of fines for various infractions.  <a href="#">Combined with RM-4, Illegal Dumping Management</a>
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.  <a href="#">Combined with ISWAC initiative A-6</a>

Section 5 outlines the recommended initiatives to carry forward and the new strategies in detail.

## 2.7 Advisory Committees

The NCRD 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. The MSWAC became the Regional Recycling Advisory Committee (RRAC), established under Bylaw No. 588 in 2014. The committee membership is composed of participants appointed from the City of Prince Rupert, the District of Port Edward, and Electoral Areas A and 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 and instead the Public and Technical Advisory Committee (PTAC) is assisting the NCRD with the new plan development. Quarterly meetings will resume following the completion of the new SWMP and the dissolution of the PTAC.

**Island Solid Waste Advisory Committee.** The Island Solid Waste Advisory Committee was recommended in the 1996 SWMP in parallel to the recommendation for MSWAC. This committee was operational for several years, however, has not been operational for over a decade. Solid waste on the Island is currently managed under the 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. The first meeting was held in July 2021, and the second in September 2021 to set the SWMP direction (Step 1 of the Guide). These meetings provided an introduction to the committee, and review of the RFP for the SWMP. Meetings are intended to be held electronically/virtually on a bi-monthly basis, or at the call of the Chair. Members of the PTAC are included in Table 4 that shows the 2023 changes in membership. A Chair and Vice-Chair were elected by PTAC at their third meeting. Where there is a vacancy on the PTAC, the NCRD has made every effort possible to fill those vacancies.

**Table 4: NCRD PTAC Membership (2021 – 2023)**

1) Patrika McEvoy, Councilor - CHAIR	Old Massett Village Council
<i>Jade Collison, Alternate</i>	<i>Old Massett Village Council</i>
2) Trent Moraes, Deputy Chief Councilor	Skidegate Band Council
3) Christina Jewell – VICE CHAIR	Dirt Nerd Soil Company
4) Tanya Ostrom, Operations Manager	City of Prince Rupert
5) Dan Franzen	Distr. of Port Edward
<i>Colleen McDonald, Alternate</i>	<i>Distr. of Port Edward</i>
6) Bret Johnston, Councilor	Village of Masset
7) Ayla Pearson	Village of Daajing Giids
8) Kazamir Falconbridge	Village of Port Clements
9) Leonard Cook, EPO	Ministry of E & CC

10) Mike Richardson, Owner	Big Red Enterprises
11) Megan Haley, Environmental Scientist (not active)	Sperling Hansen Associates
12) Ocean Rutherford, Director E.A. A	North Coast RD
13) Evan Putterill, Director E.A. E	North Coast RD
14) Edward Landrath	RRAC Member
15) Emily Peer-Groves	Dirt Nerd Soil Company
16) Stephen Grosse, Representative (2021/2022)	Council of the Haida Nation
17) Daniel Fish, CAO	North Coast RD
18) Tim Des Champ, Superintendent of Waste Management	North Coast RD
19) Rob Kidd, Manager, Island Solid Waste	North Coast RD

### **PRIOR YEARS**

Lisa Pineault, Councilor (2021/2022)	Village of Daajing Giids
Tracy Hageman, Councilor (2021/2022)	Skidegate Band Council
Hans Seideman, Manager of Building Services (2021/2022)	City of Prince Rupert
Rina Gemeinhardt, Referral Coordinator (2021/2022)	Kitsumkalum Indian Band
Danielle Myles-Wilson, CAO (2021/2022)	District of Port Edward
Des Nobels, Director (2021/2022)	North Coast Regional District
Erin Mutrie, Environmental Assessment Manager (2021/2022)	Metlakatla First Nation
Connor Pritty, Dir. of Lands, Resources & Stewardship (2021/2022)	Lax Kw'alaams
Ellen Witherly	Community Representative

## **2.8 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 Daajing Giids, several unincorporated communities and First Nations communities including Metlakatla, Lax Kw'alaams, Hartley Bay, Kitkatla, Kitselas and Kitsumkalum. These local governments and First Nations 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 along with the presence of garbage litter impacting marine ecosystems. Input and feedback on SWMP initiatives from a broad spectrum of interested parties is essential to the development of a robust, sustainable and efficient SWM system.

## 2.9 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.

## 2.10 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 compiled the following list. This list is not exhaustive and is intended to be refined as consultation is undertaken on the SWMP so organizations and agencies are not missed in the process.

**Table 5: Interested Parties in the NCRD**

Interested Parties in the NCRD	
<b>First Nations</b>	<b>Municipalities</b>
Gitga'at First Nation	City of Prince Rupert
Gitxaala First Nation	District of Port Edward
Kitselas First Nation	Village of Daajing Giids
Kitsumkalum First Nations	Village of Port Clements
Lax Kw'alaams Band	Village of Masset
Metlakatla First Nation	<b>Industry and Government Agencies</b>
Old Massett Village Council	Port of Prince Rupert
Skidegate Band Council	Prince Rupert Grain
Council of the Haida Nation	Ridley Terminals
<b>Commercial Haulers</b>	DP World Prince Rupert
Big Red Enterprises	BC Ferries
Clearbrook Trucking	BC Government Ministries
Jim's Mowing	<b>Interest Groups</b>
Skeena Waste and Recycle	Prince Rupert Environmental Society
Rupert Disposal	Dirt Nerd Soil Company
Tickers Hauling	<b>Institutions</b>
Bandstra Transportation Systems	School District 50 and 52
	Northern Health Facilities

A contact list has been managed throughout the SWMP update process.

### 3.0 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 this Second Draft SWMP, 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 serves 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) as well as the First Nations communities within the service area including Gitga'at First Nation, Gitxaala First Nation, Lax Kw'alaams Band, Metlakatla First Nation, and, to a lesser degree, Kitselas and Kitsumkalum First Nations. The Island Landfill (IL) services the residents of the Villages of Masset, Daajing Giids, Port Clements, and Electoral Areas D (rural Graham Island), and E (Sandspit, Moresby Island) as well as the First Nations communities within the service area including Old Massett Village Council, Skidegate Band Council, and the Council of the Haida Nation.

There are six transfer stations within the two service areas as summarized below:

- Mainland service area: Dolphin Island Transfer Station (Gitxaala Nation), Lax Kw'alaams Band Transfer Station and Metlakatla Transfer Station
- Islands service area: Masset Transfer Station, Skidegate Transfer Station and Sandspit Transfer Station.

The NCRD provides curbside collection of residential refuse in the Islands Service Area for Electoral Areas and the municipalities of Masset, Port Clements and Daajing Giids; First Nations provide residential and commercial curbside refuse collection in their jurisdictions. ; The City of Prince Rupert provides curbside residential refuse and recyclables collection; and the District of Port Edward provides curbside residential refuse collection..

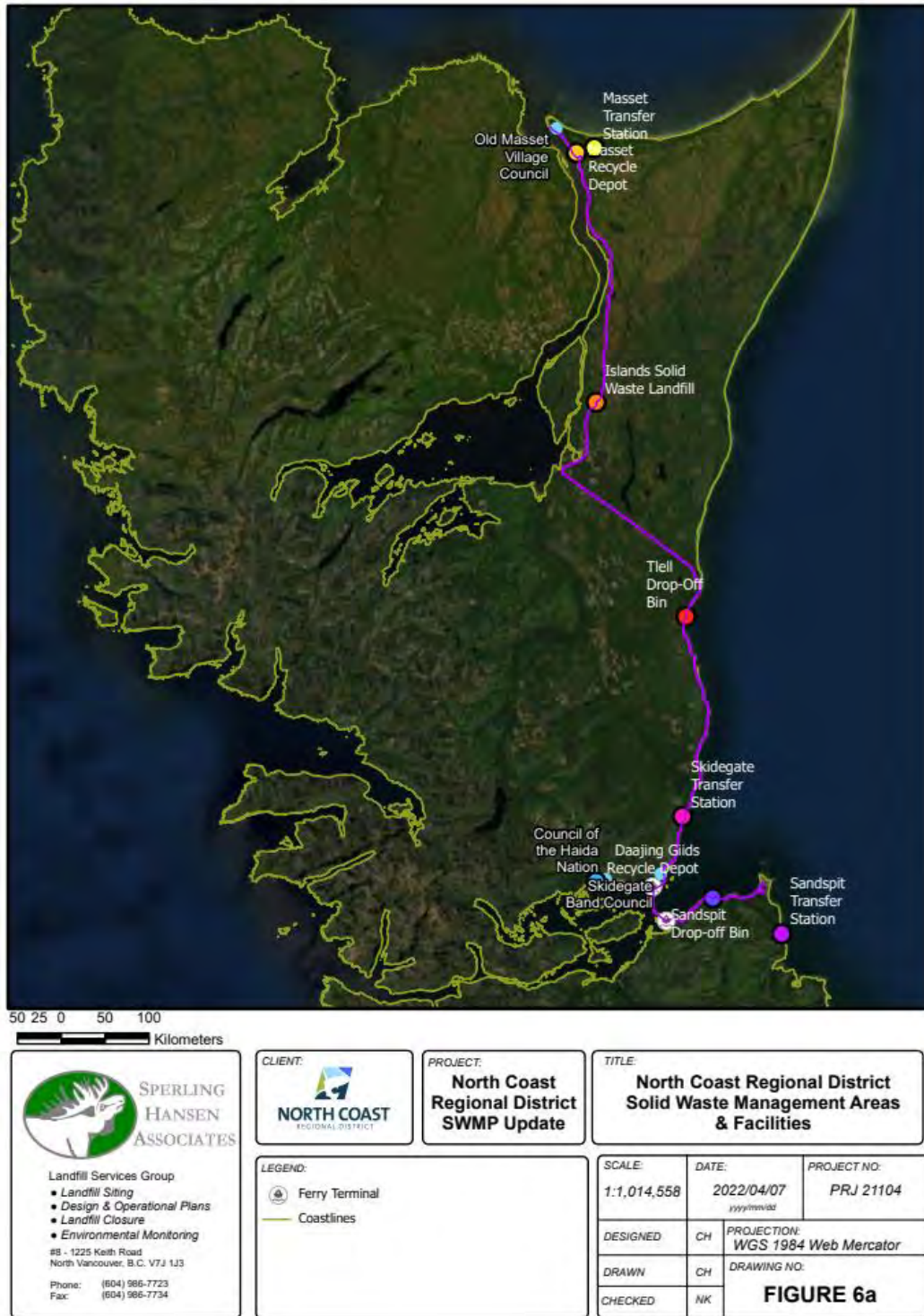
Self-haul and residential and commercial subscription hauling services are also available in both service areas to a transfer or disposal facility on a user pay basis.

With respect to recycling services, the NCRD is the main processor and marketer of residential and commercial materials. The NCRD Regional Recycling Depot in the Mainland Service Area is located in Prince Rupert and provides drop off, materials consolidation and marketing services to the region as a whole. The facility currently processes a broad range of recyclable materials for stewardship agencies and others. The City of Prince Rupert has recently formed an agreement with the stewardship agency Recycle BC to collect packaging and printed paper curbside and deliver it to the NCRD Regional Recycling Depot for processing and marketing. There are also two private bottle depots in the region: one in Prince Rupert and one in Masset.

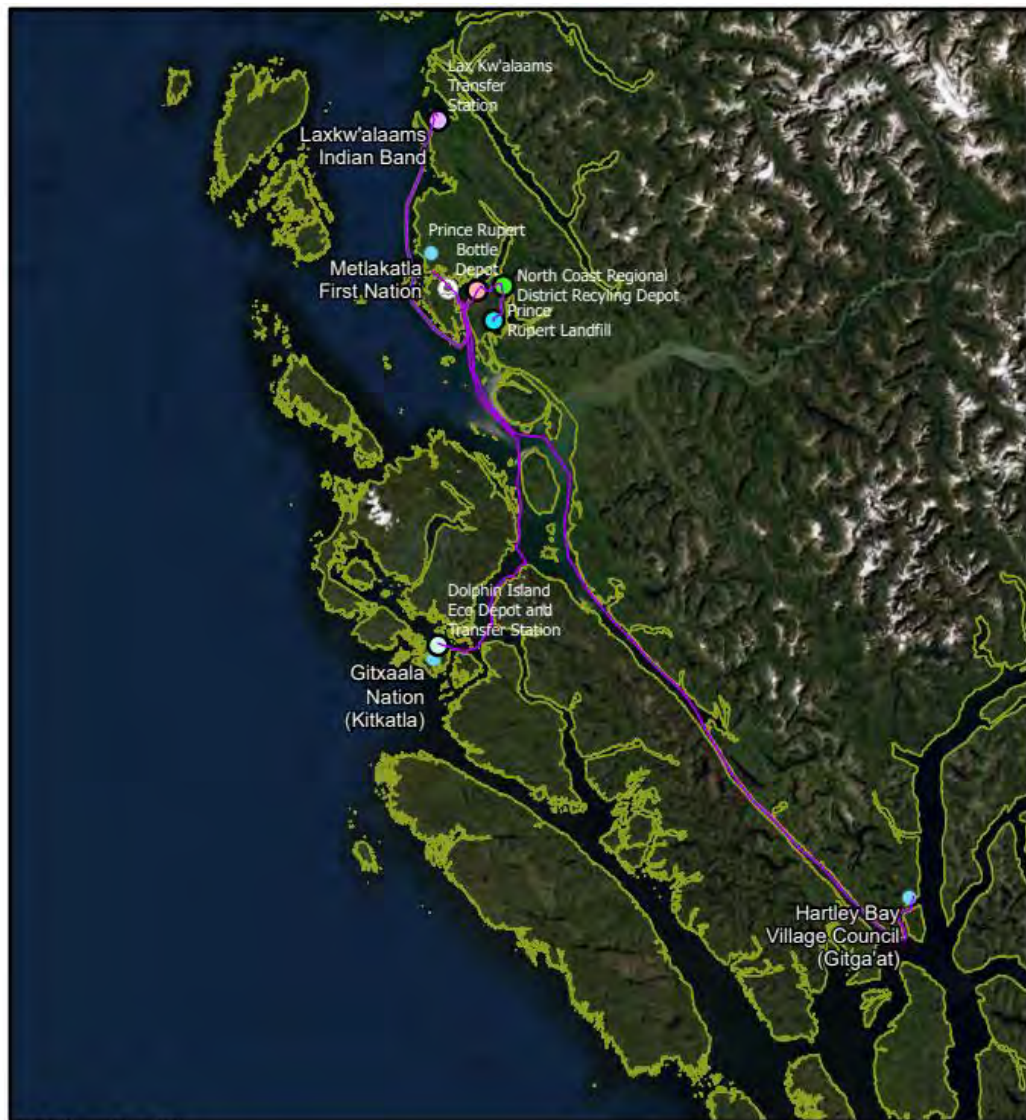
The NCRD provides recycling drop off and pickup services in the Islands Service Area, including drop off at depots in Daajing Giids, Masset and at the Islands Landfill (primarily commercial and

consolidation). NCRD also provides drop off at two community bins in Sandspit and Tlell, along with pickup of commercial cardboard throughout the Islands Service Area. All NCRD materials consolidated on Haida Gwaii are shipped to the NCRD Regional Recycling Depot in Prince Rupert for marketing.





These facilities are shown in Figures 6a and 6b and are described in further detail below.



**Figure 6a: NCRD Solid Waste Management Areas and Facilities - Island**



50 25 0 50 100  
Kilometers

 <p><b>SPERLING HANSEN ASSOCIATES</b></p> <p>Landfill Services Group</p> <ul style="list-style-type: none"> <li>• Landfill Siting</li> <li>• Design &amp; Operational Plans</li> <li>• Landfill Closure</li> <li>• Environmental Monitoring</li> </ul> <p>#B - 1225 Keith Road North Vancouver, B.C. V7J 1J3</p> <p>Phone: (604) 986-7723 Fax: (604) 986-7734</p>	<p>CLIENT:</p>  <p><b>NORTH COAST</b> REGIONAL DISTRICT</p>	<p>PROJECT:</p> <p><b>North Coast Regional District SWMP Update</b></p>	<p>TITLE:</p> <p><b>North Coast Regional District Solid Waste Management Areas &amp; Facilities</b></p>													
	<p>LEGEND:</p> <ul style="list-style-type: none"> <li> Ferry Terminal</li> <li> Coastlines</li> </ul>	<table border="1"> <tr> <td>SCALE:</td> <td>DATE:</td> <td>PROJECT NO:</td> </tr> <tr> <td>1:1,585,247</td> <td>2022/04/07 <i>yyyy/mm/dd</i></td> <td>PRJ 21104</td> </tr> <tr> <td>DESIGNED</td> <td>CH</td> <td>PROJECTION: WGS 1984 Web Mercator</td> </tr> <tr> <td>DRAWN</td> <td>CH</td> <td>DRAWING NO:</td> </tr> <tr> <td>CHECKED</td> <td>NK</td> <td><b>FIGURE 6b</b></td> </tr> </table>	SCALE:	DATE:	PROJECT NO:	1:1,585,247	2022/04/07 <i>yyyy/mm/dd</i>	PRJ 21104	DESIGNED	CH	PROJECTION: WGS 1984 Web Mercator	DRAWN	CH	DRAWING NO:	CHECKED	NK
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**Figure 6b: NCRD Solid Waste Management Areas & Facilities - Mainland**



### 3.1 Waste Diversion and Recycling

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

#### 3.2.1. Mainland Service Area

##### **Mainland Disposal Facilities**

There is only one facility that serves the Mainland Service Area for the disposal of MSW. The Prince Rupert Landfill (PRL or Landfill), owned and operated by the City of Prince Rupert, is located on Kaien Island and was established in 1991 under the ENV Operational Certificate (OC) MR-7988. The PRL is open six days per week and receives refuse and recyclable material from the City of Prince Rupert, District of Port Edward, Electoral Areas A and C, and First Nations communities, serving a population of approximately 13,500. As included in the original and existing NCRD SWMP, the City of Prince Rupert is still interested in investigating the transfer of ownership and operation of this facility to the NCRD.

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

- (a) Household recyclables (cardboard and other packaging)
- (b) Asphalt (blended with soil and used for daily/intermediate cover)
- (c) Concrete (crushed and used for construction)
- (d) Metal (recycled off site)
- (e) Rock (used for construction)
- (f) Clean Wood (unfinished/no plywood – burned)
- (g) Yard Waste (burned)
- (h) Soil (used for cover).

##### **Mainland Recycling Facilities**

**NCRD Regional Recycling Depot.** This regional depot is located within the City of Prince Rupert, was established in 1996, and serves the Mainland Service Area. Material is received through curbside programs, public and commercial drop-off, and transfer from the Islands Service Area. The facility accepts and consolidates the materials listed in Table 6 below and ships the materials to markets in cooperation primarily with stewardship agencies under agreement with the NCRD.

**Table 6: Materials and Product Stewards at the NCRD Recycling Depot**

Product Steward and Materials Accepted at the NCRD Recycling Depot	
<b>Product Care</b> <ul style="list-style-type: none"> <li>• Paint</li> <li>• Household Hazardous Waste</li> <li>• Residential Lights</li> <li>• Commercial Lights</li> <li>• Residential Fixtures</li> <li>• Non-PCB Ballasts</li> <li>• Smoke Detectors and CO Alarms</li> </ul>	<b>Recycle BC</b> <ul style="list-style-type: none"> <li>• Cardboard Boxes</li> <li>• Cartons and Paper Cups</li> <li>• Foam Packages</li> <li>• Glass Bottles and Jars</li> <li>• Metal Containers</li> <li>• Other Flexible Plastic Packaging</li> <li>• Paper Packaging</li> <li>• Plastic Bags and Overwrap</li> <li>• Plastic Containers</li> <li>• Printed Paper</li> </ul>
<b>ElectroRecycle</b> <ul style="list-style-type: none"> <li>• Small Appliances and Power Tools</li> <li>• Oversized Items (i.e., treadmills, elliptical machines, demolition power tools)</li> </ul>	<b>MARR</b> <ul style="list-style-type: none"> <li>• Large Household Appliances Air</li> <li>• Conditioners, Dehumidifiers, Stoves, Ovens</li> <li>• Refrigerators, Dishwashers</li> </ul>
<b>Tire Stewardship BC</b> <ul style="list-style-type: none"> <li>• Car, Light Truck &amp; Motorcycle Tires</li> </ul>	<b>Call2Recycle</b> <ul style="list-style-type: none"> <li>• Rechargeable Batteries</li> <li>• Alkaline and Single-Use Batteries</li> </ul>
<b>OPEI Canada</b> <ul style="list-style-type: none"> <li>• Handheld, Walk Behind and Free-Standing</li> <li>• Electric Outdoor Power Equipment</li> <li>• Tractors</li> </ul>	
<b>Return-It</b> <ul style="list-style-type: none"> <li>• Small Appliances</li> <li>• Electronics</li> </ul>	

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. It should be noted that material decline throughout the 2020-2021 period may be a result of the COVID-19 pandemic and additional monitoring into this year is underway.

Recycling data (in kgs) for this facility for the last five years is shown in Table 7. 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 for recycling. 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 2<sup>nd</sup> 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 7: 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
<b>Total Kgs</b>	<b>2,168,080</b>	<b>2,111,000</b>	<b>2,377,046</b>	<b>2,384,267</b>	<b>2,399,879</b>
<b>Total Tonnes</b>	<b>2,171</b>	<b>2,112</b>	<b>2,378</b>	<b>2,392</b>	<b>2,401</b>

### 3.2.2. Islands Service Area

#### Islands Landfill (IL) and Recycling Depot

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 Service Area. The 2019 lifespan estimate predicts a final closure in 2041 (19 years). This facility also includes the Islands Waste Management Recycling Depot staffed by two NCRD employees. Materials are received at this depot and the Landfill itself (e.g., tires) from the other Haida Gwaii NCRD depots, collection programs (i.e.,



commercial cardboard and community bins), and from commercial drop off. Staff sort and consolidate the materials for transport to the Daajing Giids Recycling Depot storage facility prior to shipment to the NCRD Regional Recycling Depot on the mainland, or stewardship agencies pickup the consolidated material and transport it to their markets (e.g., Tire Stewardship BC and BC Used Oil Management Association). The material managed through this recycling facility include the following collected from all sectors:

- (a) Packaging and printed paper (e.g., boxboard, rigid plastic, and film plastic)
- (b) Cardboard
- (c) Tin and aluminum cans
- (d) Paint and empty paint containers
- (e) Engine oil, oil containers, filters and antifreeze
- (f) Batteries (household and auto)
- (g) Refundable beverage containers
- (h) Electronics
- (i) Smoke and carbon monoxide alarms
- (j) Tires (passenger and light truck, medium truck)
- (k) Outdoor power equipment.

Where possible, ICI and Residential quantities of packaging and printed paper are kept separate for shipping since stewardship agencies are responsible for only residentially generated material.

The Masset, Skidegate and Sandspit Transfer Stations transport MSW and recyclable material to the Islands Landfill and Recycling Depot for disposal or consolidation. Materials diverted from disposal at the Landfill and Transfer Stations include the following:

- (a) Appliances with and without refrigerant
- (b) Small appliances
- (c) Empty 171 liter drums (45 gallon)
- (d) Empty tanks over 171 liters (>45 gal.)
- (e) Propane tanks 25 lbs or less
- (f) Propane tanks over 25 lbs to 100lbs
- (g) Tires under 16 inches without rims
- (h) Tires over 16 inches to 24.5"
- (i) Any tire with a rim not over 24.5"
- (j) Oversize tires (over 24.5")
- (k) Vehicle hulks stripped (no oils/battery/tires) - Not accepted at Transfer Stations

- (l) Vehicle hulks with fluids - Not accepted at Transfer Stations
- (m) Lead acid batteries
- (n) Sorted Metals
- (o) Wood – burned periodically.

**Other Recycling Depots owned and operated by the NCRD**

**Daajing Giids Recycling Depot.** The Daajing Giids Recycling Depot (DGRD) is a rented facility located at 1205 Oceanview Drive in Daajing Giids in the Ticker’s Hauling & Storage building. The DGRD serves residents and businesses in the Village of Daajing Giids, communities of Skidegate and Sandspit, Electoral Area E, and Electoral Area D (south). It is open three days per week: Sunday, Monday and Tuesday 10:00 am to 4:00 pm (18 hours/week).

The population served by the DGRD is estimated to be 2,266 based on the 2021 Census, and the number of private dwellings is estimated to be 1,048 – 1,231 (the lower figure occupied by year round residents). The NCRD rents the depot portion of the building from the owner.



The DGRD, pictured to the left, is operated by one NCRD employee and is primarily funded by the Recycle BC stewardship program effective January 31, 2023. Paint, used oil and oil containers, electronics, small appliances, smoke alarms, light bulbs, mercury thermostats and batteries are also accepted at the depot and these items are supported financially by stewardship agencies under agreement with the NCRD. The packaging and printed paper is baled and stockpiled to await shipping by transport trailer to Prince Rupert via BC Ferries. Stewardship agencies are responsible for collecting and shipping materials and often will

wait until enough material is stored before transport is economical to locations off Haida Gwaii.

The photo to the right shows stockpiled materials generated primarily by the stewardship programs and received for shipping from the Islands Landfill Recycling Depot. Although this is a convenient location to stockpile materials to await a full transport load (48 skids) to the NCRD Regional Recycling Depot in Prince Rupert the stewards do not contribute to the rent for the space. Securing enough storage for these materials can result in higher rental fees.



The quantity of material is not tracked by facility in the Islands Service Area, nor do the Stewards report their quantities by depot.

**Masset Recycling Depot.** The NCRD opened the Massett Recycling Depot (MRD) in August 2021 to service the north Islands area. The rented facility is located at 1730 Hodges Road in the Greater Massett Development Corporation building, and is open Thursday, Friday and Saturday from 9:00 a.m. to 3:30 p.m. The materials accepted at this depot are the same as those accepted at the other two NCRD depots on Haida Gwaii. They are transported from the MRD to the Islands Landfill Recycling Depot for baling and then to the DGRD for stockpiling prior to shipment off Island. The depot is operated by NCRD staff, including transport of material to the other two depots.

**Community collection bins.** These bins, open 24/7 and 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 waste and recycling stream. The bins are emptied normally once per week by the NCRD and the materials are hauled to the Islands Landfill Recycling Depot where it is processed as ICI.

### 3.2 Curbside Waste Collection

The majority of NCRD communities are provided with residential curbside collection services for refuse. Optional curbside collection is extended to commercial and industrial premises in some areas. A summary of the existing residential curbside collection programs is provided in the following tables.

**Table 8: Residential Curbside Collection**

Municipalities and Electoral Areas	Households*	Regular Curbside Collection Service		
		Garbage	Recycling	Yard Waste
City of Prince Rupert	5,747	Yes	Yes	No
Village of Port Edward	207	Yes	No	No
Electoral Area A	46	No	No	No
Electoral Area C	72	No	No	No
Village of Daajing Giids	574	Yes	No	No
Village of Port Clements	205	Yes	No	No
Village of Massett	518	Yes	No	No
Electoral Area D	327	Yes	No	No
Electoral Area E	251	Yes	No	No

**Table 9: Residential Curbside Collection – First Nations**

First Nations	Households*	Regular Curbside Collection Service		
		Garbage	Recycling	Yard Waste
Old Massett	241	Yes	No	No
Skidegate	331	Yes	No	No
Lax Kw'alaams	316	No	No	No
Metlakatla	50	No	No	No
Hartley Bay	59	No	No	No
Kitkatla	143	No	No	No

\*Total Households from Census Canada 2021

### 3.2.1. Mainland Curbside Collection

**District of Port Edwards** has a weekly manual collection service, for refuse only, which is delivered to the PRL. The service is operated in-house and is regulated under Bylaw No. 666. The service allows for two 100L containers each week for residential dwellings, and 4 containers per week for commercial premises. The bylaw includes provisions for service to commercial and multi-home residential buildings with a container provided by the municipality; and for industrial premises to join the service under a contract.

**City of Prince Rupert** has an automated weekly service for curbside collection of refuse and recycling. The service is operated in-house and is regulated under Bylaw No. 3480, which came into force on January 1, 2022, with the onboarding of the new recycling collection program. Recycling materials are transported to the NCRD recycling facility for processing and marketing. Refuse is collected in a 120L bin and residents have the option to request a larger 240L bin for a small change out fee. Refuse materials are transported to the PRL. The bylaw includes provisions for commercial collection of two containers twice per week.

**Electoral Area A and C** do not receive curbside collection service. Approximately 34% of the dwellings in these electoral areas are occupied fulltime and most are located on remote islands. Self-haul to the PRL is the main method of refuse management for residents and small businesses outside of Prince Rupert and Port Edward.

Industrial, commercial and institutional (ICI) waste is collected by private haulers under a subscription service or self-hauled.



First Nations, including Lax Kw'alaams, Metlakatla, Gitxaala and Gitga'at collect refuse from their communities and transfer it to the PRL by barge or truck.

### 3.2.2. Islands Curbside Collection

#### Residential

**Member Municipalities and Electoral Areas.** The NCRD provides residential collection services to all residential dwellings accessible by road under a manual collection contract currently with Big Red Enterprises. This contract includes service to the Village of Masset, Village of Port Clements and Village of Daajing Giids, with costs recovered through user fees collected by the local governments utilizing the service. The contract specifically requires the following routes be serviced:

- (a) Moresby Island
- (b) Daajing Giids Village and Skidegate Landing
- (c) Chinukundl Creek to Tiell, Port Clements to Nadu Road
- (d) Village of Masset and Graham Island North/Towhill Road/South of Masset to Pure Lake.

Bagged refuse is collected in Regulation Garbage Receptacles as specified by bylaw with a maximum capacity of 71L and weighing no more than 30kg. A maximum of two containers or bags may be set out each week and additional garbage requires a Bag Tag available through Big Red Enterprises.

**Old Massett Village.** Old Massett Village Council provides weekly curbside collection service to their residents and hauls the waste directly to the Islands Landfill.

**Skidegate.** Skidegate Band Council provides weekly curbside collection service to their residents and businesses and hauls the material to the Skidegate Transfer Station. They currently have a key to access the Transfer Station which makes records management difficult for the NCRD. The NCRD is contemplating requiring that this commercial truck haul direct to the Islands Landfill so that loads can be inspected and recorded accurately. This may reduce the frequency of transfer trips the NCRD has to do for the roll-off bins, thus reducing operating costs.

#### ICI

Big Red Enterprises currently provides subscription collection services for businesses on Graham Island. They have an estimated 100 customers serviced by three trucks that tip small dumpsters. The trucks haul the waste directly to the Islands Landfill where they receive a discount on their tipping fees. They bill their customers directly for this service.

On Moresby Island, Haida Gwaii Tires services businesses and delivers the waste to the Sandspit Transfer Station. They bill their customers directly for this service. The quantity of refuse is not recorded at the Transfer Station, however the owner of this company is also the Transfer Station

operator two days per week so there may be an opportunity to review these quantities. The NCRD is contemplating disallowing this commercial collection service to tip at the Transfer Station to reduce the number of roll-off truck trips the NCRD must make across the ferry to the Islands Landfill, thus reducing operating costs. Each roll-off bin transfer trip takes approximately 2.5 hours one way.

### 3.3 Collection and Facility Use Agreements

The following table provides information on the agreements between the NCRD and other jurisdictions using NCRD services.

**Table 10: Service Agreements**

Entity	Service Area	Services
Old Massett Village Council	Island	Use of Masset Transfer Station and the Island Landfill for residential MSW drop-off and disposal
Skidegate Band Council	Island	Use of Skidegate Transfer Station and the Island Landfill for residential MSW drop-off and disposal and septage disposal
Big Red Enterprises NCRD Refuse Collection Service	Island	Collection of MSW from residential dwellings, apartments and customers in the Island Waste Management Area including:  Moresby Island  Daajing Giids City and Skidegate Landing  Chinukundl Creek to Tlell  Port Clements to Nadu Road  Village of Masset and Graham Island North/Towhill Road, South of Masset to Pure Lake
Village of Masset	Island	Solid Waste Services including waste collection and recycling services  Collection of user fees by the Village of Masset on behalf of the NCRD
Village of Port Clements	Island	Solid Waste Services including waste collection and recycling services

Entity	Service Area	Services
		Collection of user fees by the Village of Port Clements on behalf of the NCRD
Village of Daajing Giids	Island	Solid Waste Services including waste collection and recycling services  Collection of user fees by the Village of Daajing Giids 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 4.4 for a list of the stewardship agencies operating in the NCRD.

### 3.4 Residuals Management Facilities

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

#### 3.4.1 Mainland and Haida Gwaii Transfer Stations

The NCRD owns and operates three transfer stations in the Islands Service Area and none in the Mainland Service Area. Additionally there are two formal facilities owned and operated by First Nations which are all described below. Available Licenses of Occupation and Operational Certificates for the facilities are attached in Appendix B.

##### Dolphin Island Ecodepot and Transfer Station

This facility in Kitkatla is operated by the Gitxaala Nation. Refuse collection in the area was reduced from twice per week to once per week and is collected by Gitxaala Nation. Waste is picked up from the transfer station every three months by Wainwright Marine and is then offloaded at the Wainwright Marine yard by Rupert Disposal. Delivery is to the PRL by Rupert Disposal. Gitxaala Nation estimates a generation rate of approximately 5 tonnes/ 3months.

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 at the site and then sent to the mainland. 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.

The current facility includes three bays with approximately 26 bins, a recycling shed, and a septic tank pumpage lagoon. Areas exist for scrap metal, whitegoods, tires, and auto hulks.

### **Lax Kw'alaam Transfer Station**

SHA was unable to find information regarding this facility at the time of writing this Second Draft SWMP.

### **Metlakatla Transfer Station**

SHA was unable to find information regarding this facility at the time of writing this Second Draft SWMP.

### **Masset Transfer Station**

The Masset Transfer Station (MTS), located on Towhill Road in the Industrial Park about 2 km east of Masset across from the Airport entrance, serves residents of the greater Masset area and is open two days per week: Wednesday 1:00 pm to 5:00 pm and Saturday 11:00 am to 3:00 pm (8 hours/week). The Transfer Station serves Old Massett Village (Masset Indian Reserve No. 1) administered by the Old Massett Village Council (OMVC), that lies on the east side of Masset Sound with a 2021 population of about 475, (, the Village of Masset administered by Masset Village Council, with a 2021 population of 838, along with residents and businesses at the north end of Electoral Area D with a population of approximately 300. As reported for the 2021 Census, the number of dwellings served is approximately 241 in Old Massett, 518 in Village of Masset, and 195 in Electoral Area D, north.



As seen in the photo to the left, there are two bays for, 30 cubic yard roll off containers with lids at the site and safety railings to reduce risk for users. There are also two other bins on site as open stockpiling is not allowed due to the proximity of the MTS to the airport. The site is attended by an NCRD employee for four hours on Wednesday and four hours on Saturday. For this site, the operator, who also hauls the bins to the Islands Landfill, works on average 14 hours per week. The operator uses their vehicle for protection from the weather as there is no gate house.

Waste deposited in the roll-off containers is transferred as-needed to the Islands Landfill north of Port Clements, about 32 km, or 25 minutes one way. This amounts to 15 to 20 m<sup>3</sup> per week, or approximately 900 m<sup>3</sup> per year. At an uncompacted density of 0.5 tonnes per m<sup>3</sup>, this equates to approximately 450 tonnes/year.

MSW is also self-hauled by residents and commercial waste haulers from the greater Masset area to the Islands Landfill. Contract haulers no longer use this Transfer Station. The Old Massett Village provides a curbside collection service for garbage in their community and the NCRD

provides a curbside collection service for garbage in the Village of Masset and Area D (Graham Island North/Towhill Road and south of Masset to Pure Lake) and haul this material direct to the Islands Landfill.

Metal and wood are collected at the MTS in roll off bins and hauled to the Islands Landfill about once per month. The quantity is unknown. Tires and major appliances are added to these bins and sorted at the Islands Landfill. The older bins are coming to the end of their life and according to NCRD staff replacement is about \$25,000/bin, FOB Haida Gwaii.

### **Skidegate Transfer Station**

The Skidegate Transfer Station (STS), built on a closed landfill, is located on Hwy 16 about 10 km north of the community of Skidegate, one of the two cultural centres of the Haida nation on the islands. The STS serves residents of the greater Skidegate area (Skidegate Band, Skidegate Landing, Miller Creek, and Daajing Giids), in Electoral Area D, and is open two days per week: Wednesday 1:00 pm to 5:00 pm and Saturday 11:00 am to 3:00 pm (8 hours/week). The Skidegate Band has an agreement with the NCRD to use the STS for residential tipping..

The service population as of the 2021 census is estimated to be 1941 not including Sandspit and area. The total number of private dwellings is approximately 980, with approximately 887 occupied by year round residents. The area is governed by the NCRD Board of Directors (Electoral Area D), Daajing Giids Village Council and Skidegate Band Council.



As seen in the photo to the left, there are two bays for 30 cubic yard roll off containers with lids at the site. There are also stockpiles for tires, scrap metal, and clean wood, which is burned periodically by a contractor, as well as a septage receiving pit. A small shipping container is used for the collection of used oil and filters. Refrigeration units are decommissioned with refrigerant removed and then stockpiled with scrap metal. The site is attended by an NCRD casual employee for the eight hours per week (they average about five

hours/day). There is a gate house for protection from the weather. An employee removes CFCs from refrigeration units, and during the burning event, the contractor stacks and sorts metal and tires and maintains roads with equipment (e.g., excavator) the NCRD does not have.

Waste deposited in the roll-off containers is transferred to the Islands Landfill north of Port Clements, about 60 km, or 46 minutes one way. The quantity of waste transported to the Islands Landfill in 2021 was reported to be 2,442 m<sup>3</sup>, or approximately 488 tonnes per year. NCRD staff estimate bins are hauled about two to three times per week to the Islands Landfill. Tires are collected and recycled by Tire Stewardship BC and the MARR stewardship agency provides funding for the major appliances program. The NCRD provides a curbside collection service to

the residences in the Electoral Area and the municipality of Daajing Giids once per week for garbage and the contractor hauls this material direct to the Islands Landfill. Skidegate Band Council operates a residential collection service and materials are dropped off at the STS. The Skidegate Band Council also operates a commercial waste collection program in their community and this material is tipped at the STS without an agreement in place during non-open hours (they have a key for the gate).

### **Sandspit Transfer Station**

The Sandspit Transfer Station (SaTS), located off Copper Bay Road on Moresby Island about 10 km from the unincorporated community of Sandspit, serves residents of the greater Sandspit area, in Electoral Area E, and is open two days per week: Tuesday 11:00 am to 1:00 pm and Saturday 11:00 am to 1:00 pm (4 hours/week). As the only community on Moresby Island, Sandspit has accommodations, a campground, supermarket and an 85-berth harbour and airport to serve residents and visitors. The BC Ferry at Alliford Bay to Skidegate Landing on Graham Island has 12, 20 minute (one way) trips every day of the week and two Dangerous Goods sailings on Thursday to connect residents, businesses and visitors to Daajing Giids, the Islands Landfill and Masset.

Electoral Area E had a population of 325 as of the 2021 census with the vast majority living in Sandspit. The total number of private dwellings is listed at 251, with 161 occupied by usual residents. The Electoral Area is governed by the NCRD Board of Directors.



As seen in the photo to the left, there are two bays for 30 cubic yard roll off containers with lids at the site. There are also stockpiles for tires, scrap metal, scrap vehicles and clean wood, which is burned periodically, as well as a septage receiving pit. Refrigeration units are decommissioned (refrigerant removed) and then stockpiled with scrap metal. The site is attended by an NCRD contractor for the four hours per week. They use their vehicle for protection from the weather as there is no gate house. The contractor removes CFCs from refrigeration units, stacks and sorts metal and tires and maintains roads.

Residential self-haul and commercial waste deposited in the roll-off container is transferred to the Islands Landfill north of Port Clements, about 112 km, or 2.5 hours one way, including the ferry travel. Construction, renovation and demolition (CRD) waste is stockpiled on site and burned regularly by the contractor. The quantity of waste transported to the Islands Landfill in 2021 was estimated to be 533 m<sup>3</sup>, or approximately 107 tonnes per year. NCRD staff estimate bin hauling occurs four to five times per month. Tires are collected and recycled by Tire Stewardship BC and the MARR stewardship agency provides funding for the major appliances program. The NCRD provides a curbside collection service to the residences once per week for garbage and hauls this material direct to the Islands Landfill.

### 3.4.3 Mainland and Haida Gwaii Landfills

Two landfill sites are in operation in the region including the NCRD owned Island Landfill (IL) and the City of Prince Rupert owned Prince Rupert Landfill (PRL) as described below.

#### **Islands Landfill**

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 operated under Operational Certificate MR-7150. The IL is situated on Lot 401 of the Queen Charlotte District of Crown Subdivision Plan 24TR1-Queen\_Charlotte PIN 2045921. Local and regional topography slopes gently at a grade of approximately 5.6 % to the southwest and in the direction of Kumdis Slough.



Bedrock geology under the site is documented as Upper Oligocene to Lower Pliocene aged sedimentary rock consisting of sandstone, conglomerate, siltstone, mudstone, shale, coal covered largely by Pleistocene glacial sediments. The nearest groundwater wells are located approximately 4 km to the south and 8 km to the north. Well logs indicate private domestic well use with stratigraphy ranging from sands, silts and clays to gravels ranging 22 mbgs to 40 mbgs. The site sits on an unmapped aquifer.

A surface water tributary exists approximately 125 m south of the site with drainage to the west marine area of the Kumdis Slough.

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 predicts a final closure in 2041 (20 years as of 2021). This facility also includes the Islands Waste Management Recycling Depot staffed by two NCRD employees. Refuse and recyclable materials are received at this facility from the other NCRD depots, transfer stations and collection programs on Haida Gwaii.

The Masset, Skidegate and Sandspit Transfer Stations, First Nations communities, residents and businesses deliver MSW to the Islands Landfill under facility use agreements, hauling contracts or self-haul where fees are collected and recorded by volume of load. Fees are charged for each load in accordance with the NCRD Bylaws.

The facility is open Monday to Friday (8:30 am – 3:30 pm), Saturday (8:00 am – 3:00 pm) and closed Sunday and Statutory Holidays.

## **Prince Rupert Landfill**

The City of Prince Rupert Landfill (PRL), is located on Kaien Island with the entrance at 500 Ridley Island Road 2 km off Hwy 16 and 12 km south of the Prince Rupert community on a small peninsula on the northern side of Wainwright Basin., The PRL was established in 1991 under the ENV Operational Certificate (OC) MR-7988. The landfilling operations occupy two parcels described as District Lot 2220, Range 5, Coast District and District Lot 8034, Range 5, Coast District. The landfill property occupies 16.1 ha of rolling land with low relief and forested terrain.



The 2021 Design, Operating and Closure Plan for the Landfill estimated a lifespan of 54 years (2076). Currently, the OC does not place a limit on waste tonnage discharged annually, however the annual gate tonnage recorded is currently about 10,000 tonnes.

With respect to the terrain and geology, the facility is built on a veneer of colluvial and mass wasting deposits and includes muskeg. Local topography slopes to the south marine water, Wainwright Basin, located approximately 100 m downgradient of the site. The site slopes from 32 m in elevation at the gate down to sea level at the coastline. This proximity to the coastline puts the site within a tsunami flood risk area (Zone A, North Coast and Haida Gwaii).

There are no residences within 500 m of the Landfill and the closest industry/business are resource extraction. Surface water receptors on the landfill property include Upper and Lower West Creek to the west and Upper and Lower East Creek to the east of the footprint both paralleling the current footprint of the landfill site.

The nearest climate station, Prince Rupert Airport Station, is located approximately 10.56 km from the site. Based on climate normals from 1981 to 2010, the average annual precipitation is approximately 2,619 mm with approximately 2,530 mm of rainfall and 92.4 cm of snowfall. The annual daily average temperature is 7.5°C. Maximum daily average temperatures are seen in August at 13.8°C whereas minimum daily average temperatures are seen in January at 2.4°C. The maximum average snowfall of 25.6 cm occurs in January.





The landfill accepts municipal solid waste at an onsite Residential Drop Off designed with the intent to consolidate and provide easier access for residents. Prohibited waste for PRL is clearly identified on the landfill brochure with alternative local recycling options provided. Prohibited waste includes items that are deemed recyclable and include vehicle & household batteries, fluorescent compact bulb and tube lights, solvents, household and marine paint, pesticides, gasoline and containers, home electronics, small home appliances, white goods, tires, used outdoor power equipment, used oil, filters and containers, used antifreeze and containers,

propane cylinders, creosote treated wood and railway ties.

Leachate is conveyed to primary and secondary lagoons where treatment occurs prior to discharge into Wainwright Basin. Treatment includes aeration, aerated lava rock trickle filters, biimedia mats, an anoxic chamber, and discharge piping to Wainwright Basin outfall. A new septage disposal facility is being constructed that will be tied to the leachate treatment system. Extensive environmental monitoring is conducted prior to discharge to ensure Operational Certificate limits are being met. On-site groundwater monitoring wells and surface waters are monitored to confirm compliance.

### **Closed Landfills**

The Sandspit and Skidegate Transfer Stations were built on old, closed landfills. These sites have received final closure but are not monitored.

### **3.2.3. Materials Managed at Disposal Facilities**

The following tables list the materials managed at the disposal facilities in the NCRD.

**Table 11: Accepted Solid Waste at Landfills**

Accepted Waste at Landfills within the NCRD	
<b>Islands Landfill</b>	<b>Prince Rupert Landfill</b>
Bagged, compacted or loose: <ul style="list-style-type: none"> <li>- Residential (household) waste</li> <li>- Industrial, Commercial, Institutional (ICI) waste</li> <li>- Construction, Renovation and Demolition (CRD) waste</li> <li>- Controlled waste (see Table 12)</li> <li>- Recyclable material:</li> </ul>	Bagged, compacted or loose: <ul style="list-style-type: none"> <li>• Residential (household) waste</li> <li>• Industrial, Commercial, Institutional (ICI) waste</li> <li>• Construction, Renovation and Demolition (CRD) waste</li> <li>• Controlled waste (see Table 12)</li> <li>• Recyclable material:</li> </ul>

Accepted Waste at Landfills within the NCRD	
<ul style="list-style-type: none"> <li>○ Clean wood &amp; yard waste</li> <li>○ Major appliances</li> <li>○ Small appliances</li> <li>○ Empty drums</li> <li>○ Empty tanks</li> <li>○ Propane tanks</li> <li>○ Tires</li> <li>○ Vehicle hulks</li> <li>○ Lead acid batteries</li> <li>○ Paint products</li> <li>○ Sorted clean metals</li> <li>○ Waste oil &amp; related products</li> </ul>	<ul style="list-style-type: none"> <li>○ Muskeg, berm material &amp; overburden</li> <li>○ Coment products</li> <li>○ Metal products</li> <li>○ Approved sorted building debris such as clean wood (no drywall/gypsum)</li> <li>○ Clean wood (no treated wood)</li> <li>○ Steel frames from mobile homes</li> <li>○ Tin, steel and aluminum</li> </ul>

The following table lists the materials that require special treatment and handling at the two landfills.

**Table 11: Controlled Waste Types Accepted at Landfills**

Controlled Waste at Landfills within the NCRD	
Islands Landfill	Prince Rupert Landfill
<ul style="list-style-type: none"> <li>- Condemned foods</li> <li>- Creosoted/Treated wood</li> <li>- Screenings and sludge from municipal sewage treatment plants, pump stations and septic systems</li> <li>- Waste asbestos</li> <li>- Food processing waste</li> <li>- Dead animals</li> <li>- Bulky waste</li> <li>- Large tires</li> <li>- Contaminated soils*</li> </ul>	<ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Liquid Wastes and sludges including sewage</li> <li>• Dead animals and animal parts (including bones, feathers, skin, hair, nails and teeth)</li> <li>• Contaminated soils acceptable to the Director of Operations*</li> <li>• Non-contaminated water waste acceptable to the Director of Operations</li> <li>• Soot</li> <li>• Mobile Homes</li> <li>• Automobile bodies, automobile parts, or boat hulls</li> <li>• Tanks, barrels, drums, pails and other large liquid containers, that re empty</li> <li>• Gypsum</li> <li>• Lumber, timber, logs etc., longer than 3.6 metres</li> <li>• Cruise ship international garbage (low and high risk)</li> <li>• Grain</li> <li>• Sandblast sand</li> </ul>

Controlled Waste at Landfills within the NCRD	
	<ul style="list-style-type: none"> <li>• Non-processed fish waste (salmon, crab, sea urchins etc.)</li> </ul>

\*\*The Prince Rupert Landfill and Island Landfill Operational Certificates authorize the disposal of contaminated soil with concentrations of contaminants that are less than hazardous waste as per the Hazardous Waste Regulation.

Waste prohibited from disposal at one or more of the landfills and transfer stations in the NCRD include and are not limited to the following:

- hazardous waste as defined in the BC Hazardous Waste Regulation including pathogenic and non-sterilized biomedical waste, and explosive, reactive, radioactive, flammable and ignitable waste
- chemicals or other materials that may create hazardous working conditions
- waste oil, petroleum by-products, used oil filters or equipment lubricant filters
- liquid waste or slurry
- all forms of excrement excluding minor amounts of domestic pet waste
- tanks, barrels, drums, pails, and other large liquid containers that are not empty
- any other material deemed by operations or the Medical Health Officer as hazardous, unacceptable, or unsuitable for disposal at the site.

Some recyclable materials, for which there is a local recycling program in place, are considered 'prohibited' for disposal in the NCRD and Prince Rupert bylaws, including some types of tires and batteries and commercial quantities of cardboard. Refer to Table 16 below for a more comprehensive list of prohibited materials.

### 3.2.4. Disposal Quantities

Tonnage records were made available by the City of Prince Rupert for waste received at their landfill dating back to 1995. They track quantities buried and stockpiled on site from the residential garbage collection programs in Prince Rupert and Port Edward as well as commercial, school district 52, the City Public Works department and self-haul residential and commercial. They also track and record the cash received and the amounts charged. It was not possible to ascertain the quantities from residential, ICI and CRD sources individually.

Staff at the Islands Landfill track MSW from the NCRD curbside garbage collection program, the transfer stations, Band Council collection programs, and self-haul. Mixed waste and controlled waste are also recorded. It was not possible to ascertain the quantities contributing to the Landfill individually from residential, ICI and CRD sources. The quantities are recorded on a volume basis. For the purposes of this SWMP the volumes were converted to tonnes to determine the disposal rate and compare with other communities.

Table 13 provides disposal quantity information based on information and reports provided by the facility owners. The disposal rate for the NCRD was calculated to be in the order of 710 kg/capita with substantially less on Haida Gwaii compared to the Mainland.

As described in Section 3.1 several materials are segregated at the disposal facilities for reuse and recycling. Wood and Yard Waste is burned periodically to reduce the volume. Problem waste such as scrap metal, auto hulks and crushable material are stockpiled for a number of years before programs for reducing the quantity are developed and/or economical.

**Table 12: Waste Quantities**

Location	Material Type	Source	Refined Source (SHA)	Refined Type (SHA)	Tonnes	Cubic Meters	Annual Waste Statistics
<b>Prince Rupert Landfill</b>							
	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		
<b>Total Mainland Refuse</b>					11,334		
						<b>2021 Tonnes</b>	11,334
						<b>Mainland 2021 Census Population</b>	13,510
						<b>2021 tonnes/per capita/year</b>	0.84
<b>Islands Landfill</b>							
	Residential MSW	Big Red	Moresby Island	Res	404	2,021	
	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	
<b>Total Islands Refuse - not including C&amp;D that was used to build berm</b>					1,560	7,799	
						<b>2021 Tonnes</b>	1,560
						<b>Islands 2021 Census Population</b>	4,582
						<b>2021 tonnes/per capita/year</b>	0.34
<b>Total for NCRD</b>							
						<b>2021 Tonnes</b>	12,894
						<b>2021 Census Population</b>	18,181
						<b>2021 tonnes/per capita/year</b>	0.71

## 4.0 WASTE DIVERSION TOOLS

### 4.1 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, staff and the receiving environment.

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 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 Service 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 the Islands Service Area 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 Island 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 14 below shows the waste composition for the Island waste area in 2018, according to Lamm’s report.

**Table 13: Lamm (2019) Waste Characterization for Islands Service 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)
<b>Category</b>										
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:

- (a) Available curbside collection programs
- (b) Access to EPR programs
- (c) Cultural habits and values (backyard composting and waste burning)

- (d) Geography (island and remote communities)
- (e) Transportation limitations (ferries)
- (f) Seasonal variation (tourism and spring clean-ups)
- (g) Convenience of disposal versus diversion (curbside vs drop-off)
- (h) Diversion programs at disposal sites: yard waste, wood, scrap metal, etc.
- (i) Bag/can limits
- (j) Economic incentives (user pay vs taxation and variable tipping fees)
- (k) Disposal bans and enforcement of such
- (l) 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. The studies should be 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 14 based on the Island' study. As stated above, this should be further refined with a new quantitative study at the Prince Rupert Landfill.

**Table 14: Waste Composition Quantities Based on Lamm Study**

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.

## 4.2 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 many 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:

- (a) Batteries (Vehicle and Household)
- (b) Fluorescent Compact Bulb and Tube Lights
- (c) Solvents, Household & Marine Paint, Pesticides, Gasoline & Containers
- (d) Home Electronics Including: Computers, Monitors, TV's, Printers
- (e) Small Home Appliances Including: Microwaves, Vacuums, Water Coolers, Dehumidifiers, Oil Heaters
- (f) White Goods (Major Home Appliances) Including: Fridges, Freezers, Ovens, Ranges, Washing Machines, Dryers, Dishwashers, Air Conditioners, Furnaces, Hot Water Tanks
- (g) Tires
- (h) Used Outdoor Power Equipment Including: Lawnmowers, Snow Blowers, Power Saws, Weed Trimmers, Pressure Washers
- (i) Creosote Treated Wood & Railway Ties
- (j) Cans of paint and spray paint.

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

- (a) Appliances
- (b) Small Appliances
- (c) Empty 171-liter drums
- (d) Empty tanks over 171 liters
- (e) Propane tanks
- (f) Tires
- (g) Vehicle hulks (not accepted at Transfer Stations)
- (h) Lead acid batteries



- (i) Paint products
- (j) Waste oil/filters/containers
- (k) Sorted Metals.

There are no variable tipping fees or stipulation of fines or surcharges for unsorted loads or loads containing the above materials. It is common to add additional items to the restrictions or prohibited list when viable diversion options become available such as organics, including yard waste, wood waste and food scraps; concrete and other crushable waste; textiles; mattresses/box-springs; glass [could be considered with crushable waste]; asphalt shingles; drywall/gypsum wallboard; 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 much less at \$17.10/tonne. Another disincentive at the PRL is their fee for white goods and excess cardboard: \$660 per load. These items are accepted at the NCRD's 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:

- (a) Used outdoor power equipment - Seasport Marina in Prince Rupert
- (b) Used oil and antifreeze - to a local auto repair shop
- (c) 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 16.

**Table 15: Prohibited Wastes at Landfills within the NCRD**

Island Landfill	Prince Rupert Landfill
<ul style="list-style-type: none"> <li>- Liquids</li> <li>- Slurry (except as permitted)</li> <li>- Empty steel and plastic drums, unless they are crushed, shredded or similarly reduced in volume to the maximum practical extent</li> <li>- Ignitable waste</li> <li>- Radioactive waste</li> <li>- Special waste (except as permitted)</li> <li>- Refuse that is on fire or smouldering</li> <li>- Explosives</li> </ul>	<ul style="list-style-type: none"> <li>• Hazardous (including pathogenic and radioactive wastes)</li> <li>• "Hazardous Wastes" as defined by the Environmental Management Act (BC)</li> <li>• Any substance prescribed as "waste" by regulation under the Environmental Management Act</li> <li>• Non-sterilized biomedical waste</li> <li>• Explosive substances</li> </ul>

Island Landfill	Prince Rupert Landfill
<ul style="list-style-type: none"> <li>- Industrial chemical waste</li> <li>- Lead acid batteries (except as permitted)</li> <li>- Small tires or large tires mounted on rims</li> <li>- Ozone depleting substances except as permitted herein.</li> </ul>	<ul style="list-style-type: none"> <li>• Chemicals or other materials which may create hazardous working conditions</li> <li>• Inflammable materials</li> <li>• Ashes or other materials hot enough to start combustion</li> <li>• Waste oil, petroleum by-products, used oil filters or equipment lubricant filters.</li> <li>• Contaminated water waste</li> <li>• All forms of excrement excluding minor amounts of domestic pet waste.</li> <li>• Tanks, barrels, drums, pails, and other large liquid containers that are not empty, unless authorized by the Director of Operations.</li> <li>• Creosote painted/pressure treated materials</li> <li>• Contaminated soils unacceptable to the Director of Operations</li> <li>• Tires</li> <li>• Commercial loads of dry cell batteries</li> <li>• Corrugated cardboard from commercial sources</li> <li>• White goods</li> <li>• 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.</li> <li>• Some prohibited materials may be accepted in small quantities for recycling</li> <li>• Wire rope</li> </ul>

As shown above, waste diversion can be managed through controlling when, what and how waste materials are brought to the disposal facilities. Amendments to regulatory bylaws as more local programs are implemented for recyclable materials should be carefully considered with respect to the sustainability of new programs and length of the implementation period.

### 4.3 Bylaws

The NCRD and member municipalities have adopted bylaws for the management of solid waste in the region, including for service establishment, reserves establishment, rates and site and program regulations and rules. A summary of these bylaws is included in the following table.

**Table 16: Solid Waste Related Bylaws within the NCRD and Incorporated Areas**

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

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.

#### 4.4 Waste Diversion Programs – Successes, Opportunities and Barriers

Besides the tools described above, the most noticeable **successes in waste diversion** in the NCRD have involved the BC Recycling Regulation and its Extended Producer Responsibility (EPR) program requirements. These have resulted in a significant change in the method and quantity of materials diverted in the NCRD since the mid-1990s. The following is a list of the programs currently active in the region with an indication of the quantities of materials collected and reported in recent years.

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 Q2 2022 for NCRD depots on Haida Gwaii) – 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]

Additional to the EPR programs listed above, the following summarizes the waste diversion programs available in the NCRD, including an indication of the quantity of material recently reported or lacking reporting.

1. Convenient community drop off depots and bins for recyclable material operated by the NCRD for the residential and commercial sector – five on Haida Gwaii [2021: 2,147 m3 collected and shipped, including above listed quantities] and one on the Mainland [2021: 1,315 tonnes processed and marketed, including above listed quantities]
2. NCRD provided commercial cardboard curbside collection service to approximately 34 institutional and commercial customers on Haida Gwaii that use bags provided by the NCRD. The program was originally implemented to help keep the community bins from overflowing and currently the \$20/pickup – unlimited amount user fee is not sufficient to cover the costs. [quantities not reported]
3. NCRD provided commercial office paper curbside collection service provided to approximately 50 institutional and commercial customers in the Prince Rupert and Port Edward area. The user fee of \$15, \$20, or \$30 per pickup, depending on number of bags, is not sufficient to cover the costs. [2021: 42 tonnes transported to the NCRD Regional Recycling Depot for processing and marketing – not included in Recycle BC quantities]
4. City of Prince Rupert curbside recycling collection program – started in January 2022 under agreement with Recycle BC [quantities not yet reported, however the estimate is approximately 30 tonnes per month, or about 25 kg per capita]
5. 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].

The following are other **potential opportunities** that, because of their similarity to programs already in place in the region, may be given consideration for future assessment, design and implementation:

1. Curbside recyclable material collection in Port Edward under agreement with Recycle BC
2. Curbside recyclable material collection on the same routes as garbage collection on Haida Gwaii under agreement with Recycle BC
3. Curbside recyclable material collection in Old Massett and Skidegate under agreement with Recycle BC
4. Increased disposal prohibitions and/or associated fees that provide disincentive to mix any amount in a load brought to the Islands Landfill and Transfer Stations, and at the Prince

Rupert Landfill including all materials currently under a stewardship program agreement with the NCRD and/or City of Prince Rupert

**Barriers to waste diversion** observed by SHA during development of the SWMP include the following:

1. Economies of scale that many smaller and lower populated regions experience when attempting to fund programs, especially if there is hesitation to increase taxation or user fees to cover costs
2. Distance and shipping costs to get collected materials to markets and reuse/recycle and disposal opportunities, and few opportunities for backhaul
3. Staffing resources to manage and implement new programs and initiatives.

#### **4.5 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 and has not been continued. SHA has included the provision of a Waste Reduction Coordinator in this Second Draft SWMP that is intended to be instrumental in moving many of the strategies, initiatives and day to day improving of system efficiencies ahead, including quantity recording and reporting.

#### **4.6 Waste Reuse Initiatives**

The NCRD Regional 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.

Additionally, several thrift and used goods stores as well as social media marketplaces exist in the NCRD and provide opportunities for reuse of goods prior to end of life.

## 5.0 GOALS AND STRATEGIES

To meet a reduced disposal target, for example: from the existing rate of 710 kg/capita to the provincial average of 500 kg/capita, SHA recommends the policies and programs outlined herein be implemented over the next five to ten years. The initiatives are divided into Waste Diversion and Residuals Management with a further breakdown into administrative, residential, ICI, and CRD. The options are summarized in Table 18 at the end of the section that includes the diversion potential. Note that for municipal and First Nations recycling and waste collection programs, they are responsible for providing planning and education/behaviour change support for their own programs.

### 5.1 Waste Diversion

#### Administrative

##### **A-1: Improve the operational efficiency of the NCRD waste management system.**

Issue: Improve regular examination of each solid waste management service so that they can be refined and modified as necessary to improve efficiency.

1. Develop a set of parameters that can be assessed quarterly or annually by the service area managers including but not limited to:
  - a. quantity of each type of material handled by source (jurisdiction) and type (Residential, ICI, CRD) in tonnes
  - b. costs (wages, utilities, maintenance, trucking, other)
  - c. revenues and number of operating hours
2. Prepare an annual report on SWMP status and present to the Board of Directors
  - a. Table of contents: Summary, 2022 SWMP Initiatives Status, Diversion Targets, Plan Monitoring Committee, Waste Diversion Contingency Plan, Plan Financing and Landfill Closure Reserve, Performance Monitoring, Disposal Rate, Refuse Disposed by Source and Type, Diversion of Materials at Disposal Sites, Other Diversion, RCBC & Recyclepedia Inquiry Data, Solid Waste Management Trends
3. Prepare asset management plans and update as necessary to ensure equipment and other capital replacements are on schedule and funded

##### **A-2: Continue monitoring solid waste management facilities and services.**

Issue: continue monitoring facilities and services to be proactive with respect to repairs and maintenance and funding large capital improvements.

1. This initiative can be accomplished through the collection of service specific data – refer to A-1.



### **A-3: Improve service delivery to rural and underserved communities in the Islands and Mainland service areas.**

Issue: some areas of the region remain underserved with respect to waste diversion opportunities even though delivery of waste collection, processing and disposal services in the NCRD rural communities has undergone fairly recent improvements. Improvements have been initiated directly by the NCRD and by other jurisdictions including increased access to facilities through management agreements and extended operating hours.

1. Continue to remain open to requests for assistance with provision of services in underserved areas.

### **A-4: Improve transportation of materials between service areas.**

Issue: Costs of transporting recyclable material and refuse between the Island facilities and between the Island and the Mainland can be very difficult to control.

1. 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 it is essential to record costs and schedules systematically (see A-1) using a consistent set of parameters on a regular basis
2. Review site access for contractors to improve hauling times
3. Examine availability of switch bins.

### **A-5: Develop cost recovery models.**

Issue: Improvement is needed with respect to understanding service costs and revenues.

1. Implement A-1
2. Discuss cost recovery options through public and interested parties consultation including with the finance managers of the member municipalities.

### **A-6: Establish a permanent Island Solid Waste Advisory Committee.**

Issue: There is no longer an advisory committee to assist with managing the Islands Solid Waste Service.

1. Reestablish the Island Solid Waste Advisory Committee.
2. Establish terms of reference and meeting schedule for the committee
3. Advertise for and solicit interested members.

### **A-7: Expand the list of prohibited wastes.**

Issue: Improve waste diversion by prohibiting materials from disposal that have an alternative use or can be recycled under a viable and sustainable program (e.g. EPR). These items would not be banned from disposal until there is a viable alternative.

1. Examine current options for expanding EPR programs in the region such as:

- a. Household Batteries at transfer stations
  - b. Cell Phones/Wireless Equipment at transfer stations and landfills
  - c. Refundables at Island recycling depots
  - d. Lead-Acid Batteries at Island recycling depots
  - e. Outdoor Power Equipment at NCRD Recycling Depot
  - f. Packaging & Paper Products at drop bins
  - g. Styrofoam at Island recycling depots and landfill
  - h. Used Oil/Antifreeze at NCRD Recycling Depot and Island recycling depots
  - i. Paint Plus at all Island facilities
2. Examine options for diverting hazardous waste to environmentally secure disposal (refer to R-7)

#### **A-8: Update Bylaws.**

Issue: The NCRD waste management bylaws are out of date and may not comply with current stewardship programs.

1. Update Bylaw 276
2. Update Bylaw 587.

#### **A-9: Upgrade the Septage Receiving Facility at the Skidegate Transfer Station**

Issue: Upgrades to the Septage Receiving Facility at the Skidegate Transfer Station are needed. The NCRD has asked SHA to develop a plan that identifies the required upgrades, the service area, the operational requirements, and the costs to protect the environment, provide a sustainable well operated facility to Island stakeholders, and to comply with the Operational Certificate.

1. Develop the Skidegate Septage Treatment Lagoon Management Plan
2. Update bylaws and agreements for the facility use.

### **Residential**

#### **R-1: Fund a Waste Reduction Coordinator.**

Issue: As a carry forward item from the 1996 SWMP that wasn't implemented it has been difficult to dedicate time and resources to waste reduction communication and education in the region.

1. Develop terms of reference for a specialty skilled waste reduction and education coordinator shared between the Island and Mainland Services
2. Hire a full-time waste reduction and education coordinator.

**R-2: Assist users and improve their participation in waste segregation and diversion programs.**

Issue: Improve user knowledge and participation in waste diversion.

1. Determine if participation and knowledge is low and why it is low through a public survey
2. Examine the use of tools such as RecycleCoach, a mobile phone App
3. Utilize a waste reduction and education coordinator to make improvements
4. Develop a quarterly online newsletter
5. Improve website and brochure information.

**R-3: Maximize compliance with new and existing stewardship programs.**

Issue: 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.

1. Ensure non-refundable glass and tin containers are part of the RecycleBC program to be implemented in the Islands Service Area (these items stopped being collected by the NCRD in 2015 due to storage and shipping issues but they are part of the Packaging and Paper Products stewardship program in the Province managed by RecycleBC and should become part of the agreement)
2. Ensure good records are kept and communication is consistent
3. Ensure the service agreement terms and conditions are laid out clearly and in writing with acceptable service change notices and possible compensation for withdrawal
4. Examine space constraints at facilities.

**R-4: Optimize recycling efficiencies by increasing diversion rates for residential materials or commercial generators that are below average.**

Issue: Diversion rates for residential and commercial recyclable material may be low and need to be optimized to ensure processing efficiency.

1. 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
2. Monitor market declines on a regular basis
3. Regularly research alternate generators that could help balance or mitigate declines in quantity received and processed
4. Conduct participation surveys including 'ride alongs' with residential collection trucks
5. Conduct face-to-face meetings with ICI generators
6. Consider space constraints at Island facilities.

**R-5: Develop a strategy to reduce single-use items.**

Issue: Use of single-use items such as plastic grocery bags, take-out containers and straws has become a major waste disposal and littering problem throughout the world, especially in the marine environment. The NCRD has not implemented any single-use items bans in the region to date.

1. Investigate a potential single-use plastic ban for the region, or at least an education program that promotes the Federal Government's policies
2. Examine policies already implemented by other jurisdictions
3. Coordinate efforts with member municipalities.

**R-6: Develop a food waste reduction strategy.**

Issue: Food waste is one of the largest components of refuse going to landfill (25% estimated in the NCRD), it negatively impacts GHG production, it can be used beneficially for soil improvement, and diverting this 'low hanging fruit' will make the largest impact on diversion in most communities.

1. Encourage food waste reduction through educating the public about how to buy food in a way that does not result in waste (e.g. Love Food Hate Waste federal campaign)
2. Consider developing an organics management strategy for the region either in house or utilizing a consultant (\$40,000 added to 5-Year Financial Plan in 2025)
3. Utilize a waste reduction and education coordinator to develop and implement a food waste diversion strategy via brochures, social media, school visits, etc and utilize print materials already available from senior government and other regional districts
4. Implement a backyard composting program that includes subsidizing the cost of composters
5. Consider banning organics from the landfills with sufficient notice to help establish processing capacity in the region starting with commercially generated food waste
6. Consider implementing a residential food waste collection program once processing capacity is established
7. Establish processing capacity leveraging senior government grant programs
8. Work with member municipalities and First Nations in a coordinated effort to set policy (e.g. OCPs, bylaws) especially with respect to GHG reduction.

**R-7: Collect household hazardous waste (HHW).**

Issue: To prevent harming human health and the environment, it's essential that hazardous waste is handled, stored, transported, treated and disposed of properly in the region, especially at NCRD facilities.

1. Collaborate with communities, public organizations, industry leaders and private agencies to ensure that current technology and best practices guide the handling and disposal of hazardous waste in the region

2. Continue to work with and improve programs with stewardship agencies that have taken on the responsibility of end of life for HHW including Product Care and BCUOMA who currently manage a select number of products in the NCRD
3. 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 stewards
4. Consider space constraints and staff safety for this initiative
5. Establish a paint share program for the Island (currently only in Prince Rupert).

**R-8: Encourage reuse such at thrift stores.**

Issue: Improve reuse of materials and products in the region.

1. Support already established not-for-profit and for-profit businesses that make reuse a priority
2. Add reuse messaging to the NCRD website
3. Organize a used clothing drop off bin at NCRD facilities (e.g. Diabetes Canada).

**R-9: Work with local bicycle retailers for inclusion in the Tire Stewardship BC bicycle tire program.**

Issue: Tire Stewardship BC recycling of bicycle tires and tubes is underutilized in the region.

1. Help Tire Stewardship BC set up a drop off location for bicycle tires and tubes on both the Island and Mainland.

**R-10: Change the way Recyclable Material is collected on Haida Gwaii to lower costs and enhance waste diversion.**

Issue: The costs to operate the Daajing Giids and Masset Recycling Depots far outweigh the revenue received from taxation, user fees and stewardship agency funding. As the costs and revenues for the Islands Solid Waste Management service are for the most part amalgamated, existing fees and charges for other services cover the costs. It has been suggested that the funding for this facility may be better spent upgrading the central recycling depot at the Islands Landfill if there is sufficient space available for additional infrastructure, and also spent on covering shipping costs to the NCRD Recycling Depot in Prince Rupert. Also, currently the Skidegate Band and Old Massett Village councils do not pay into this recycling service.

1. Review implementation of a curbside collection recycling program on Haida Gwaii to replace the Daajing Giids and Masset Recycling Depots on the same route as the current garbage collection service
2. Centralize and enhance recyclable material collection, processing and storage at the Islands Landfill Recycling Depot
3. Implement multi-material roundups with the support of stewardship agencies to collect a wide assortment of products and materials, and consider holding the events in conjunction with other community activities such as farmers markets and repair cafes

4. Consider adding more community bins in areas that may need the convenience of local drop off options
5. Develop cost sharing agreements with First Nations for use of existing and new recycling services
6. Consider the costs to close facilities and terminate agreements where necessary and provide at least six months notice to residents and businesses of any changes to the services.

### **Institutional, Commercial and Industrial**

#### **I-1: Encourage initiatives for commercial organics diversion.**

Issue: Organic waste diversion from the commercial sector has not yet been encouraged in the NCRD. Encouraging diversion of organics generated in the ICI sector would need to start with education and showing how a generator can save money on tipping fees by reducing the amount of food waste produced.

1. Examine policy changes to drive diversion of organics such as providing a disincentive through raising tipping fees or banning organics at a disposal facility
2. Start with educating sectors that would be impacted by an organics policy change (may require additional staff as described in R-1)
3. Ensure there is an alternative in place and a lengthy implementation period if an organics ban is implemented.

#### **I-2: Enhance and enforce ICI solid waste source control.**

Issue: Minimizing solid waste generation in the ICI sector has not been a focus of the NCRD to date but could result in substantial diversion quantities if a sector specific program is implemented.

1. Start with education as described above for other initiatives, especially with respect to drop off opportunities that may not charge fees
2. Design and perform waste generation audits for businesses that are interested in doing their part for the environment and setting an example
3. Consider policies that balance the 'carrot and stick' approach (e.g. increase tipping fees for mixed loads that contain recyclable material, offering awards for businesses that have waste reduction policies).

#### **I-3: Recover costs of ICI PPP collection and processing.**

Issue: Revenue collected for the commercial paper and cardboard recycling pickup programs operated by the NCRD in the Islands and Mainland Service Areas are not sufficient to cover costs. User fees would need to be raised by at least 60% for the Islands service and over 100% for the Mainland service.

1. Consider increasing pickup fees
2. Ask commercial customers to drop off material instead of having it picked up

3. Promote a private service
4. Use an alternative mechanism for recovering costs (e.g. taxation).

### **Construction, Renovation and Demolition**

#### **CRD-1: Clean wood waste diversion and re-use.**

Issue: Clean wood that could be used for other purposes (e.g. chipped and composted for landfill cover) is not being diverted but instead is mixed with other wood products and burned at Island disposal facilities except at the Masset Transfer Station.

1. Implement a clean wood segregation program
2. Consider making 'cut-ends' and other materials useful for construction available to the public
3. Vary the tipping fees for clean versus dirty wood to provide incentive to separate
4. Consider chipping clean wood, including branches and broken logs and stumps, for mixing with soil and using for landfill cover and landscaping, or for composting into a useable and/or saleable product
5. Consider wood-waste diversion and re-use in accordance with FireSmart BC principles.

## **5.2 Residuals Management**

#### **RM-1: Maintenance of Transfer Stations.**

Issue: This item is also from the original SWMP (I4.1.4) and recommends that maintenance of the transfer stations be included in the garbage collection contract to ensure that the three Islands transfer stations are regularly maintained or at least a report is provided to the NCRD on the condition of the site on a monthly basis so that any repairs and issues can be resolved on a proactive basis.

1. Develop terms of reference to include in future transfer station operation contracts
2. Implement a transfer station maintenance reporting structure.

#### **RM-2: Islands collection costs review.**

Issue: From the original SWMP item I5.2.1 recommends that the estimated annual cost of the Islands garbage collection contract be apportioned amongst the total number of collection units and applied to the bills.

1. Review total collection contract costs and ensure fees collected support all incurred costs including administration
2. Review actual dwelling counts on a regular basis (e.g. bi-annually)

3. Review agreements with jurisdictions collecting fees on the NCRD's behalf to ensure costs are commensurate with the effort used.

**RM-3: Problem waste stockpiled at facilities.**

Issue: According to NCRD staff, some recyclable materials such as auto hulks, scrap metal and crushable items tend to accumulate at some facilities where the stockpiles become problematic. Item I9.1.1 in the original SWMP identified this issue and it appears that it is still an ongoing problem.

1. Develop a problem waste materials program that includes the following:
  - a. Collection of sufficient tipping fees to cover disposal/recycling costs
  - b. Establish a problem waste management reserve that would be used on a regular basis (e.g., every five years) to manage problem waste stockpiles
  - c. Regularly inquire (bi-annually at least) about costs to crush, transport,
  - d. Look for backhaul windows of opportunity for shipping materials.

**RM-4: Illegal dumping management.**

Issue: As in the original SWMP (I10.2.2), and still pertinent to today, the NCRD requires an illegal dumping management strategy.

1. Develop and adopt an illegal dumping bylaw with a schedule of fines for various infractions that corresponds to the Provincial rules so Conservation Officers can enforce
2. Coordinate with member municipalities and First Nations to ensure messaging is consistent.
3. Develop an illegal dumping management strategy consisting of at least the following:
  - 1) Report all illegal dumping to the Solid Waste Manager
  - 2) Use social media to request witnesses where possible
  - 3) GPS each dump site to monitor trends/patterns
  - 4) Erect signs at each common dump site stating that the areas are under surveillance and illegal dumping is strictly enforced
  - 5) Assist community groups/clubs with cleanup by allowing free tipping with prior written approval
  - 6) Attempt to find evidence of who dumped the garbage when possible so that letters could be written to the illegal dumper with the threat of fines
  - 7) Work with local Conservation Officers to issue fines where possible.



**RM-5: Close the Masset Transfer Station.**

Issue: The cost to operate the Masset Transfer Station is in the order of \$148/tonne with the annual revenue from tipping fees being about 18% of the annual expenses. Now that all commercial loads are going direct to the Islands Landfill, there is an existing weekly curbside garbage collection service in place, there are commercial subscription services available, and the Landfill is a 25-minute drive from the Transfer Station, closure of this facility is considered to be the practical and economical choice. Also, the facility needs new roll-off bins at a price of about \$25,000 each and a perimeter fence for security and safety at an estimated cost of \$75,000.

- 1) Consider enhancing the curbside garbage collection service to include one or two bulky item pick-up services per year and 'free tipping' days at the Islands Landfill
- 2) Consider closure costs and agreement terminations associated with Transfer Station
- 3) Provide sufficient notice to area residents and businesses prior to closure; minimum six months
- 4) Reallocate staff to other programs.

**RM-6: Increase Sandspit Transfer Station Operational Efficiencies.**

Issue: Currently the subscription commercial garbage hauler, Haida Gwaii Ties, tips their loads at the Sandspit Transfer Station and the NCRD's curbside garbage collection contractor hauls their loads directly to the Islands Landfill. Disallowing commercial haulers to tip at the Transfer Station would reduce the number of transfer trips from Sandspit to the Islands Landfill, thus saving the service substantial operating costs. The revenue received from tipping fees at the Transfer Station is at least 50% less than operating costs. Quantities received at the Transfer Station are not recorded.

- 1) Consider disallowing the tipping of commercial loads of garbage at the Transfer Station bins
- 2) Amend bylaws to reflect changes to facility use requirements
- 3) Consider enhancing collection by offering a bulky item pickup service once or twice per year and additional 'free days' at the Islands Landfill
- 4) Provide sufficient notice for any program changes.

**RM-7: Increase Skidegate Transfer Station Operational Efficiencies.**

Issue: The Skidegate Transfer Station receives loads of refuse from commercial collection vehicles operated by the Skidegate Band Council on Reserve lands, and the NCRD residential curbside collection contractor hauls direct to the Islands Landfill 46 minutes' drive north, then west of the Skidegate community. Disallowing commercial haulers to tip at the Transfer Station would reduce the number of transfer trips from Skidegate to the Islands Landfill, thus saving the service

substantial operating costs. The revenue received from tipping fees at the Transfer Station is at least 73% less than operating costs. Quantities received at the Transfer Station are not recorded.

- 1) Consider disallowing the tipping of commercial loads of garbage at the Transfer Station bins
- 2) Amend bylaws to reflect changes to facility use requirements
- 3) Consider enhancing collection by offering a bulky item pickup service once or twice per year and additional 'free days' at the Islands Landfill
- 4) Provide sufficient notice for any program changes.

#### **RM-8: Prince Rupert Landfill Transfer to the NCRD.**

Issue: The 1996 SWMP contained an initiative to transfer the Prince Rupert Landfill permit to the Regional District (M6.4.1). Throughout engagement and consultation on the 2022 draft SWMP, this possibility was raised again. It is not uncommon in BC for regional districts with the regulatory authority to manage solid waste in their region through an approved SWMP to take over and/or assume ownership of local government MSW disposal facilities in their region, with the goal of administering as many of the active disposal facilities as possible to harmonize waste management goals, objectives and bylaws in the region.

- 5) Review the pros and cons associated with the transfer of ownership initiative
- 6) Participate and share in the costs associated with information sharing workshops
- 7) Record all comments related to this initiative in the SWMP Public Consultation Report.

### **5.3 Waste Diversion Potential**

Table 18 provides a summary of the above listed initiatives along with the estimated diversion potential for each. The total potential diversion quantity of 3,036 tonnes represents a change in disposal per capita of 167 kg per capita, bringing the NCRD disposal rate down to 543 kg per capita from the current 710 kg per capita.

**Table 17: Diversion Potential Summary**

Initiative	Planned Strategy	Diversion Potential (Tonnes)
A-1	Improve the operational efficiency of the NCRD waste management system	
A-2	Continue monitoring solid waste management facilities and services	
A-3	Improve service delivery to rural and underserved communities in the Island and Mainland service areas	
A-4	Improve transportation of materials between service areas	
A-5	Develop cost recovery models	
A-6	Establish a permanent Islands Solid Waste Advisory Committee	
A-7	Expand the list of prohibited wastes	400
A-8	Update Bylaws and Website (Island & Mainland)	
A-9	Upgrade the Septage Receiving Facility at the Skidegate Transfer Station	
R-1	Fund a Waste Reduction Coordinator	483
R-2	Assist users and improve their participation in waste segregation and diversion programs	
R-3	Maximize compliance with new and existing stewardship programs	400
R-4	Optimize recycling efficiencies residential materials or commercial generators	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
R-10	Change the way Recyclable Material is collected on Haida Gwaii to lower costs and enhance waste diversion	106
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	
CRD-1	Clean wood waste diversion and re-use	
RM-1	Maintenance of Transfer Stations	
RM-2	Islands Collection Costs Review	
RM-3	Problem Waste Stockpiled at Facilities - Auto Hulks	
	Crushable Waste (e.g. Concrete)	
RM-4	Illegal Dumping Management	
RM-5	Close Masset Transfer Station	
RM-6	Increase Sandspit Transfer Station Operational Efficiencies	
RM-7	Increase Skidegate Transfer Station Operational Efficiencies	
RM-8	Prince Rupert Landfill Transfer to the NCRD	

## 6.0 PLAN MONITORING AND MEASUREMENT

### 6.1 Solid Waste Management Plan Monitoring Committee

It is recommended that a committee be formed to monitor the implementation of the SWMP and to make recommendations to increase the effectiveness of the initiatives and strategies. A Draft Terms of Reference for a SWMP Monitoring Task Force is attached in Appendix G and should be reviewed in consultation with the PTAC before this advisory committee is dissolved.

### 6.2 Annual Reporting

The NCRD will compile data from NCRD facilities on all residual disposal activities in the regional district and provide annual information to the ENV online disposal calculator.

### 6.3 Five-Year Effectiveness Review

Five years into the implementation of the SWMP, the NCRD will carry out a review of the plan's implementation and effectiveness, as prescribed by the ENV. This review should result in a report that is made publicly available and does not need to be submitted to the ENV for approval. This review may include:

1. Overview of all programs or actions undertaken in the first five years to support the plan goals and targets, including status and implementation cost for each
2. Description and forecasted budget for programs or actions not yet started and status, including explanations for delays or cancellations of plan components
3. Five-year trend information for waste disposal per person
4. Five-year trend of greenhouse gases emitted and avoided, if available
5. Any significant changes that might impact the solid waste management system over the next five years.

The cost is expected to be in the order of \$25,000 for the report and should be cost shared between the service areas.

### 6.4 Waste Composition Studies

In advance of the five-year review noted above, a multi-season waste composition study on the residual waste management stream is recommended for year 1 and year 5, if appropriate, in advance of the next SWMP Update to assess the success of current waste diversion programs and policies and to identify opportunities for additional diversion. These studies cost in the order of \$100,000 each and should be cost shared between the Islands and Mainland service areas.

## 6.5 Plan Flexibility and Risk

The SWMP lays out the high-level goals, costs, and timelines for solid waste program implementation in the NCRD. Several factors may affect the cost and timeline to implement each strategy including external changes to priorities, partner programs, and regulations, hauler collection and processing capacity, market fluctuations, and internal variations in priorities and availability of budget and staff time to implement programs. The SWMP is intended to be flexible in the implementation of plan components, either directly or in cooperation with municipalities or through private firms and/or non-profit organizations. While the SWMP provides flexibility in implementation depending on internal and external factors, the following risks should be considered:

1. Achieving the identified disposal target is dependent on successful implementation of all strategies identified in the SWMP.
2. Costs provided are conceptual level estimates and may differ from the actual costs to implement programs depending on the details of program, infrastructure design and timing of implementation. As a result, more involved programs and infrastructure expected to result in significant impact to stakeholders are likely to undergo further assessment prior to implementation.
3. The success of most items is dependent on allocation of staff to adequately design, implement and assess programs.
4. Several items are dependent on partnerships with local, regional, or provincial organizations which may experience changes in priority throughout the SWMP timeframe.
5. The success of reduce, reuse and recycle strategies will be affected by education, user participation convenience and behaviour change programs.
6. The Recycling Regulation is not easy to amend and additional EPR products may not be added in a timely manner.
7. The ENV may require changes to the operation of regional disposal facilities through orders and updates to Permits and Operational Certificates which would impact the timelines and priorities for investment at disposal facilities along with potentially reducing available funding to support diversion initiatives.

Should there be any disputes with respect to the SWMP, internal corporate and governance procedures will take effect.

## 7.0 FINANCE AND ADMINISTRATION

As outlined in Technical Memo No. 3 attached as Appendix E and Technical Memo No. 4 attached as Appendix F, a five-year financial plan for the Solid Waste Management services will help the NCRD plan for future expenditures and revenues until the next SWMP review is carried out. The following two tables outline the 2022 budget and provide the strategy items shaded in green and equipment replacement and capital (including studies) items shaded in yellow in their prospective implementation year, including their resultant net costs for 2023 – 2027. An inflation factor of 4% was used for successive years for all line items that would inflate with the economic situation except for fuel. A 6% inflation rate was used for fuel costs.

Tables 18 and 19 show a NET cost for years 2023 to 2027. The revenues have not been adjusted so that the costs of the waste diversion strategies, disposal capital requirements and equipment replacements, described fully in Appendix E, Tech Memo 3 and Appendix F, Tech Memo 4, are more clearly shown over the next five years and to provide discussion opportunities with respect to recovering the costs. The line items highlighted green are the strategies and initiatives as listed above. The yellow highlighted items are capital and equipment replacements required over the next five years as currently contemplated.

**Table 18: Mainland Solid Waste Five Year Financial Plan**

ITEM	2023	2024	2025	2026	2027
<b>REVENUE</b>					
Tax Requisition	\$ 265,040	\$ 265,040	\$ 265,040	\$ 265,040	\$ 265,040
Grants	\$ 21,470	\$ 21,470	\$ 21,470	\$ 21,470	\$ 21,470
Sale of Services	\$ 4,290	\$ 4,290	\$ 4,290	\$ 4,290	\$ 4,290
Commercial Charges	\$ 34,480	\$ 34,480	\$ 34,480	\$ 34,480	\$ 34,480
Processing	\$ 128,650	\$ 128,650	\$ 128,650	\$ 128,650	\$ 128,650
Interest/Investment Income	\$ 7,100	\$ 7,100	\$ 7,100	\$ 7,100	\$ 7,100
Loan (Debt) Proceeds					
Recycling Agreements	\$ 29,610	\$ 29,610	\$ 29,610	\$ 29,610	\$ 29,610
Recycled Commodities Revenue	\$ 290,850	\$ 290,850	\$ 290,850	\$ 290,850	\$ 290,850
Rental and Lease Income	\$ 9,900	\$ 9,900	\$ 9,900	\$ 9,900	\$ 9,900
Transfer from Reserves	\$ -	\$ -	\$ 30,000	\$ -	\$ -
<b>TOTAL</b>	<b>\$ 791,390</b>	<b>\$ 791,390</b>	<b>\$ 821,390</b>	<b>\$ 791,390</b>	<b>\$ 791,390</b>
<b>EXPENDITURES</b>					
Wages & Benefits	\$ 554,440	\$ 576,617	\$ 599,682	\$ 623,669	\$ 648,616
R-1 Fund a Waste Reduction Coordinator	\$ 46,847	\$ 48,721	\$ 50,670	\$ 52,697	\$ 54,804
Support Services	\$ 82,946	\$ 80,752	\$ 83,982	\$ 87,342	\$ 90,835
A-8 Update Bylaws & Website	\$ 5,300				
RM-8 Prince Rupert Landfill Transfer to the NCRD	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500
Staff Expenses	\$ 6,864	\$ 7,139	\$ 7,424	\$ 7,721	\$ 8,030
Memberships & Professional Fees	\$ 15,600	\$ 16,224	\$ 16,873	\$ 17,548	\$ 18,250
Office Expenses	\$ 10,317	\$ 10,729	\$ 11,159	\$ 11,605	\$ 12,069
Freight/Transportation	\$ 57,512	\$ 59,812	\$ 62,205	\$ 64,693	\$ 67,281
Disposal/Tipping Charges	\$ 9,599	\$ 9,983	\$ 10,382	\$ 10,798	\$ 11,230
Materials Purchases	\$ 520	\$ 541	\$ 562	\$ 585	\$ 608
Shop Supplies and Small Tools	\$ 20,696	\$ 21,524	\$ 22,385	\$ 23,280	\$ 24,211
Facilities Repair & Maintenance	\$ 23,556	\$ 24,498	\$ 25,478	\$ 26,497	\$ 27,557
Facilities Operation	\$ -	\$ -	\$ -	\$ 54,000	\$ 56,160
R-7 Collect HHW				\$ 54,000	\$ 56,160
Facilities Insurance	\$ 13,042	\$ 13,563	\$ 14,106	\$ 14,670	\$ 15,257
Monitoring & Lab Testing	\$ 6,916	\$ 7,193	\$ 7,480	\$ 7,780	\$ 8,091
Utilities	\$ 25,709	\$ 26,737	\$ 27,807	\$ 28,919	\$ 30,076
Legal	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217
Advertising & Promotion	\$ 1,248	\$ 2,398	\$ 2,494	\$ 3,344	\$ 3,477
A-7 Expand List of Prohibited Waste		\$ 1,100	\$ 1,144	\$ 1,190	\$ 1,237
R-6 Develop a Food Waste Strategy				\$ 750	\$ 780
Vehicle Insurance	\$ 1,747	\$ 1,817	\$ 1,890	\$ 1,965	\$ 2,044
Vehicle Fuel/Lubricants	\$ 13,992	\$ 14,832	\$ 15,721	\$ 16,665	\$ 17,665
Vehicle Repair & Maintenance	\$ 57,720	\$ 60,029	\$ 62,430	\$ 64,927	\$ 67,524
Debt Payments	\$ 25,650	\$ 25,650	\$ 25,650	\$ 25,650	\$ 25,650
Transfer to Reserves (Capital/Planning)	\$ 77,970	\$ 77,970	\$ 47,970	\$ 77,970	\$ 77,970
Contribution to Reserves	\$ 4,130	\$ 4,130	\$ 4,130	\$ 4,130	\$ 4,130
<b>TOTAL</b>	<b>\$ 1,011,714</b>	<b>\$ 1,043,720</b>	<b>\$ 1,051,436</b>	<b>\$ 1,175,427</b>	<b>\$ 1,218,448</b>
NET	-\$ 220,324	-\$ 252,330	-\$ 230,046	-\$ 384,037	-\$ 427,058
<b>CAPITAL</b>					
Mainland Recycling-Building Renovation					
R-3 Maximize Stewardship			\$ 80		
R-7 Collect HHW				\$ 200	
RM-4 Illegal Dumping Management	\$ 231				
SWMP 5 Year Review					\$ 15,000
Organics Management Strategy	\$ 20,000				
Waste Characterization Study				\$ 70,000	
Baler			\$ 30,000		
<b>TOTAL</b>	<b>\$ 20,231</b>	<b>\$ -</b>	<b>\$ 30,080</b>	<b>\$ 70,200</b>	<b>\$ 15,000</b>
NET	-\$ 240,555	-\$ 252,330	-\$ 260,126	-\$ 454,237	-\$ 442,058



**Table 19: Island Solid Waste Five Year Financial Plan**

ITEM	2023	2024	2025	2026	2027
<b>REVENUE</b>					
Tipping Fees	\$ 108,630	\$ 108,630	\$ 108,630	\$ 108,630	\$ 108,630
User Fees - Collection Services	\$ 704,130	\$ 704,130	\$ 704,130	\$ 704,130	\$ 704,130
User Fees - Other	\$ 45,900	\$ 51,900	\$ 51,900	\$ 51,900	\$ 51,900
Tax Requisition	\$ 287,112	\$ 296,943	\$ 307,166	\$ 317,799	\$ 328,857
Early/Late Payment	-\$ 8,050	-\$ 8,050	-\$ 8,050	-\$ 8,050	-\$ 8,050
Grants					
Interest/Investment Income	\$ 6,020	\$ 6,020	\$ 6,020	\$ 6,020	\$ 6,020
Sundry Income	\$ 5,500	\$ 5,500	\$ 5,500	\$ 5,500	\$ 5,500
Loan Proceeds					
Transfer from Reserves	\$ -	\$ -	\$ -	\$ -	\$ -
Transfer from COVID Reserve (310)	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
Recycled Commodities Revenue	\$ 48,300	\$ 48,300	\$ 48,300	\$ 48,300	\$ 48,300
<b>TOTAL</b>	<b>\$ 1,198,542</b>	<b>\$ 1,214,373</b>	<b>\$ 1,224,596</b>	<b>\$ 1,235,229</b>	<b>\$ 1,246,287</b>
<b>EXPENDITURES</b>					
Wages & Benefits	\$ 598,869	\$ 622,823	\$ 647,736	\$ 673,646	\$ 700,592
R-1 Fund a Waste Reduction Coordinator	\$ 46,847	\$ 48,721	\$ 50,670	\$ 52,697	\$ 54,804
Support Services	\$ 109,388	\$ 106,484	\$ 110,743	\$ 115,173	\$ 119,779
A-6 Islands Solid Waste Advisory Committee					
A-8 Update Bylaws & Website	\$ 7,000				
Staff Expenses	\$ 7,280	\$ 7,571	\$ 7,874	\$ 8,189	\$ 8,517
Memberships & Professional Fees	\$ 10,930	\$ 61,368	\$ 11,000	\$ 11,440	\$ 11,898
Office Expenses	\$ 14,498	\$ 15,078	\$ 15,681	\$ 16,308	\$ 16,960
Freight/Transportation	\$ 26,208	\$ 27,256	\$ 28,347	\$ 29,480	\$ 30,660
Facilities Repair & Maintenance	\$ 18,980	\$ 19,739	\$ 20,529	\$ 21,350	\$ 22,204
Facilities Insurance	\$ 4,566	\$ 4,748	\$ 4,938	\$ 5,136	\$ 5,341
Permits & Licenses (315)	\$ 260	\$ 270	\$ 281	\$ 292	\$ 304
Monitoring & Lab Testing	\$ 11,263	\$ 11,714	\$ 12,182	\$ 12,670	\$ 13,176
Rent	\$ 58,635	\$ 60,981	\$ 63,420	\$ 65,957	\$ 68,595
Utilities	\$ 7,738	\$ 8,047	\$ 8,369	\$ 8,704	\$ 9,052
Legal	\$ 2,080	\$ 2,163	\$ 2,250	\$ 2,340	\$ 2,433
Advertising & Promotion	\$ 1,560	\$ 2,722	\$ 2,831	\$ 3,695	\$ 3,842
A-7 Expand List of Prohibited Waste		\$ 1,100	\$ 1,144	\$ 1,190	\$ 1,237
R-6 Develop a Food Waste Strategy				\$ 750	\$ 780
Vehicle Insurance	\$ 6,760	\$ 7,030	\$ 7,312	\$ 7,604	\$ 7,908
Vehicle Fuel/Lubricants	\$ 68,688	\$ 72,809	\$ 77,178	\$ 81,809	\$ 86,717
Vehicle Repair & Maintenance	\$ 50,960	\$ 52,998	\$ 55,118	\$ 57,323	\$ 59,616
Vehicle Lease (Loan) (313)	\$ 26,330	\$ 26,330	\$ 26,330	\$ 26,330	\$ 26,330
Contract Services	\$ 266,306	\$ 278,926	\$ 281,279	\$ 359,227	\$ 372,647
R-10 Curbside Collection & 2 Collection Events on Haida Gwaii				\$ 75,500	\$ 75,500
CRD-1 Clean Wood Waste Diversion and Re-Use					
RM-1 Maintenance of Transfer Stations	\$ 2,600	\$ 2,600	\$ 2,600	\$ 2,600	\$ 2,600
RM-3 Problem Waste - Auto Hulks					
RM-3 Problem Waste - Crushables					
RM-5 Close Masset Transfer Station: 2 Bulky Item Pickup Events		\$ 12,000	\$ 12,000	\$ 12,000	\$ 12,000
RM-6 Increase Sandspit TS Operational Efficiencies			-\$ 9,500	-\$ 9,500	-\$ 9,500
RM-7 Increase Skidegate TS Operational Efficiencies				-\$ 29,500	-\$ 29,500
Transfer to Reserves	\$ 27,000	\$ 27,000	\$ 27,000	\$ 27,000	\$ 27,000
Contribution to Reserves	\$ 74,020	\$ 74,020	\$ 74,020	\$ 74,020	\$ 74,020
Problem Waste (Auto Hulks, Crushables, Scrap Metal)	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000
ISW General (310)	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500
Transfer Stations (315)	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000
Landfill (317)	\$ 48,520	\$ 48,520	\$ 48,520	\$ 48,520	\$ 48,520
<b>TOTAL</b>	<b>\$ 1,392,318</b>	<b>\$ 1,502,078</b>	<b>\$ 1,486,918</b>	<b>\$ 1,580,691</b>	<b>\$ 1,640,591</b>
NET	-\$ 193,776	-\$ 287,706	-\$ 262,321	-\$ 345,462	-\$ 394,304
<b>CAPITAL</b>					
Hauling (313)					
Landfill (317)					
Transfer Stations (315)					
A-9 Upgrade the Septage Receiving Facility at STS			\$ 900,000		
R-3 Maximize Stewardship			\$ 22,720		
R-10 2 Community Bins				\$ 12,000	
RM-4 Illegal Dumping Management	\$ 231				
RM-5 Close Masset Transfer Station: Trailer		\$ 10,000			
OCC Baller		\$ 30,000			
Phase 5 Island Landfill Closure	\$ 600,000				
Island Landfill DOCP Update		\$ 75,000			
SWMP 5 Year Review					\$ 10,000
Organics Management Strategy	\$ 20,000				
Waste Characterization Study				\$ 30,000	
Roll Off Containers	\$ 65,000		\$ 240,000		
ISW Pickup			\$ 105,000		
<b>TOTAL</b>	<b>\$ 685,231</b>	<b>\$ 115,000</b>	<b>\$ 1,267,720</b>	<b>\$ 42,000</b>	<b>\$ 10,000</b>
NET	-\$ 879,007	-\$ 402,706	-\$ 1,530,041	-\$ 387,462	-\$ 404,304





## 8.0 PLAN SCHEDULE

Table 20 provides a draft implementation schedule for the Solid Waste Management Plan from 2023 to 2027. The draft schedule is meant to be a guide to assist the RD with preparing the planned implementation.

**Table 20: Implementation Schedule**

Initiative	Planned Strategy	Target Year
A-1	Improve the operational efficiency of the NCRD waste management system	2024
A-2	Continue monitoring solid waste management facilities and services	2023
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	2024
A-5	Develop cost recovery models	2024
A-6	Establish a permanent Islands Solid Waste Advisory Committee	2023
A-7	Expand the list of prohibited wastes	2024
A-8	Update Bylaws and Website (Island & Mainland)	2023
A-9	Upgrade the Septage Receiving Facility at the Skidegate Transfer Station	2025
R-1	Fund a Waste Reduction Coordinator	2023
R-2	Assist users and improve their participation in waste segregation and diversion programs	2023
R-3	Maximize compliance with new and existing stewardship programs	2025
R-4	Optimize recycling efficiencies residential materials or commercial generators	2023
R-5	Develop a strategy to reduce single-use items	2023
R-6	Develop a food waste reduction strategy	2026
R-7	Collect household hazardous waste (HHW)	2026
R-8	Encourage reuse such as thrift stores	2023
R-9	Work with local bicycle retailers for inclusion in the Tire Stewardship BC bicycle tire program	2023
R-10	Change the way Recyclable Material is collected on Haida Gwaii to lower costs and enhance waste diversion	2026
I-1	Encourage initiatives for commercial organics diversion	2023
I-2	Enhance and enforce ICI solid waste source control	2023
I-3	Recover costs of ICI PPP processing	2024
CRD-1	Clean wood waste diversion and re-use	2028
RM-1	Maintenance of Transfer Stations	2023
RM-2	Islands Collection Costs Review	2024
RM-3	Problem Waste Stockpiled at Facilities - Auto Hulks	2028
	Crushable Waste (e.g. Concrete)	2028
RM-4	Illegal Dumping Management	2023
RM-5	Close Masset Transfer Station	2024
RM-6	Increase Sandspit Transfer Station Operational Efficiencies	2025
RM-7	Increase Skidegate Transfer Station Operational Efficiencies	2026
RM-8	Prince Rupert Landfill Transfer to the NCRD	2027

## 9.0 REFERENCES

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## 10.0 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

## 11.0 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

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**APPENDIX A**  
**Public Consultation Plan – Updated for Round 2**

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# SOLID WASTE MANAGEMENT PLAN PUBLIC CONSULTATION & ENGAGEMENT PLAN

**NORTH COAST REGIONAL DISTRICT**  
Prepared by: Sperling Hansen Associates Inc.

**Revision 1: April 28, 2023**



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## 1 INTRODUCTION

Between 2021 through 2023, the North Coast Regional District (NCRD) is undertaking a review and update of its 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 municipal solid waste (MSW) collection, disposal, reduction and recycling and service cost recovery. SWMPs are required for all regional districts in British Columbia under the Environmental Management Act (EMA). The NCRD's first and only SWMP was adopted in 1996 under the former Skeena-Queen Charlotte Regional District and the many initiatives outlined therein have been implemented.

A key part of this planning process is the public engagement and consultation, which is to be initiated during the Draft SWMP creation in accordance with the BC Guidelines for Solid Waste Management Planning. Throughout the SWMP process, the NCRD Public Technical Advisory Committee (PTAC), a group with technical, non-technical, First Nation, public, community interest, and elected official representation, meet to discuss the objectives, strategies, options, and progress of the SWMP. PTAC provides recommendations to the NCRD Board of Directors for consideration. The organizations that form the current PTAC are listed below.



To engage with other stakeholders within the NCRD, including area First Nations, a strategy has been created with the aim of engaging the public early in the process so that their input and feedback can be part of the plan development. This early engagement is critical to the success of our planning efforts. This Consultation Plan presents the proposed initiatives to reach the broadest audience and receive constructive feedback with which to inform the SWMP.

After the first round of consultation was completed, changes to the Draft SWMP were requested. This Consultation Plan has been modified to include additional consultation and engagement during the summer of 2023 to ensure the changes are broadly discussed, with the general public, stakeholders and First Nations before the SWMP is finalized by the Board.

For the NCRD planning process, we envision the most effective means of communication to conduct consultation, includes local media, online social platforms, and the NCRD website. The in-person engagement component will also be essential for stakeholders to better understand the plan objectives and options. Open houses will take place after the second Draft SWMP has been submitted to the PTAC for review and comment, and the NCRD Board of Directors have released the Draft for consultation. In addition, we propose the use of a digital online survey, which will provide the NCRD with extensive data and feedback on solid waste issues and concepts.

Aside from engaging the public early, other objectives of the consultation process are to provide consistent information throughout the project phases and create the opportunity for residents and businesses to comment on the draft plan. Most, if not all, of the engagement in the consultation periods will allow direct quantification of viewership and engagement with consultation materials. Specifically, with online viewership, we will be able to tally the following:

- Number of webpage visits
- Number of surveys completed
- Number of different individuals visiting the webpage
- Document downloads
- Facebook page visits and comments.

Best practices in regional solid waste management planning requires that adequate public review and consultation of the SWMP must be completed. In addition, the public consultation process was designed to meet elector approval requirements for any borrowing of funds required to implement the plan once it is approved.

## **1.1 Background and Consultation Objectives**

The NCRD's first solid waste management planning process was initiated prior to the 1995 SWMP, which was approved by the Ministry of Environment and Climate Change Strategy (ENV) and subsequently adopted by the RD Board in 1996. Most of the 1996

plan was implemented by the NCRD and some items will carry forward under the new Plan.

The objectives of public consultation associated with the current planning process are as follows:

- To ensure requirements under the Environmental Management Act (EMA) are met
- To ensure the public consultation considerations outlined in the Guide to Solid Waste Management Planning are addressed
- To engage the PTAC and public early in the process and provide sufficient time to consider the feedback received during the preparation of the plan
- To provide interested parties with open, transparent information throughout the planning process and prior to RD Board recommendations
- To provide opportunities for input and feedback during the process and once the draft Plan is released.

## **2 PLAN INITIATION**

The SWMP review process was identified as a priority project by the NCRD Board. The process was initiated in 2021 with the tendering and selection of the project consultant, Sperling Hansen Associates, (SHA) to guide the process and complete required background data collection, development of Technical Memoranda, and presentations to PTAC and the Board, followed by development and presentation of the first and second draft SWMP.

Following these steps, the public portion of the planning process can be initiated with the finalization and implementation of this Consultation Plan.

## **3 PUBLIC CONSULTATION – THE PLAN**

The public consultation process is to be executed in three phases:

- Phase 1 - Prior to drafting of the SWMP (July 2022 – September 2022)
- Phase 2 - Following completion of the draft SWMP (October – December 2022)
- Phase 3 (new) – Following update and approval by the Board of the second draft SWMP (June – August 2023).

The first, second and third phases include a survey which are intended to find out how the public is using the current system, gauge their satisfaction and convenience levels, identify areas they would like to see contemplated through the SWMP review process, and provide an opportunity to comment on the initiatives presented in the draft SWMP. It

is important to first fully understand the public's priorities prior to developing the SWMP as opposed to presenting them with a plan and then asking what they think about it. As a result, great weight is being put on the early phase of consultation with the intention that the draft plan would consider and reflect this input from the public.

An online survey format has been found to be the most efficient and cost-effective way of conducting regional surveys. Additionally, with the reach of digital media and the internet, online surveys can connect to a greater audience.

Survey #1 has been developed using previously successful templates provided by SHA. Understanding that the Island and Mainland regions of the NCRD are two very different solid waste systems, questions have been modified to apply to both areas while still requesting the same information. The survey was created using Survey123 and is available at the following link: <https://arcg.is/88T04>.

The initial survey was sent to emails subscribed to the NCRD newsletter. In addition, it was posted to the NCRD SWMP page, the NCRD Facebook page, and several other Facebook groups that contain membership in NCRD communities. These include:

- District of Port Edward (Facebook page with 721 followers)
- Prince Rupert (private Facebook group of 3,200 members)
- Haida Gwaii Communities (private Facebook group of 1,900 members)
- Haida Gwaii Observer (Facebook page with 5,049 followers)

The survey was also distributed to local media via a news release. Newspaper outlets include:

- The Haida Gwaii Observer (online only)
- Prince Rupert Northern View.

Webpages to be contacted about displaying the surveys on their platform include:

- Council of the Haida Nation <https://www.haidanation.ca/news/>
- Lax Kw'alaams Band <https://laxkwalaams.ca/>
- Metlakatla First Nation <http://www.metlakatla.ca/>
- Gitga'at Nation <http://gitgaatnation.ca/>
- Gitxaala Nation <https://www.gitxaalanation.com/>
- Kitselas Nation <https://kitselas.com/>
- Skidegate Band Council <http://www.skidegate.ca/>
- Old Masset Village Council <https://oldmassetvillagecouncil.com/>
- Kitsumkalum Band <https://kitsumkalum.com/>
- District of Port Edward <https://www.portedward.ca/>
- City of Prince Rupert <https://www.princerupert.ca/>
- Village of Port Clements <https://portclements.ca/>
- Village of Masset <http://massetbc.com/>
- Village of Daajing Giids <https://www.daajinggiids.ca/> .

The number of households recorded for the Island area is 2,128, and 5,361 for the Mainland. At a response rate of 30%, which is considered typical for regional online surveys, the target number of household responses is 638 and 1,608 respectively.

It is envisioned that the surveys will remain open for two (2) months, after which time the submitted responses will be compiled and the data analyzed and presented to the PTAC.

From the Survey #1, there were several key findings:

- Geographic location of survey respondents (i.e., electoral area, First Nation, city, district, or village)
- Percentage of respondent's satisfaction and level of convenience with the current garbage, recycling, and organics management programs
- Percentage of respondent's desire for composting options
- Degree to which residents travel to reach solid waste facilities and how far they are willing to travel to get these services – Level of convenience
- Percentage of respondents that support a user-pay system for waste disposal
- Education and awareness level regarding collection/return to retail provided by the private sector and Extended Producer Responsibility Programs (EPR, regulated end of life management programs) in the NCRD
- Priorities for future waste management programs (i.e., cost, environmental protection, convenience, job creation, etc.)
- Support for new programs and initiatives.

The results of Survey #1 were shared with the PTAC, compiled in a Survey Summary, and widely shared with the public. Based on the Survey #1 responses, Survey #2 was built on areas of concern and further gauged support for potential initiatives presented during public consultation.

### **Phase 2 - Follow-Up Survey: Draft Solid Waste Management Plan “What do you think?” (Survey #2)**

To collect feedback from the public, a second survey was drafted and reviewed by the PTAC prior to distribution and after the draft SWMP was made available to the public. This second survey was distributed in the same way and to the same outlets as Survey #1. Results from the second survey were shared, and presented to the PTAC.

### **Phase 3 - Follow-Up Survey: Second Draft Solid Waste Management Plan “What do you think?” (Survey #3)**

To collect feedback from the public, a third survey will be drafted and reviewed by the PTAC prior to distribution and after the second draft SWMP is made available to the public. This third survey will be distributed in the same way and to the same outlets as Survey #1 and #2. Results from the third survey will be shared and presented to the PTAC and used to finalize the SWMP.



## 4 PUBLIC MEETINGS

For round one of consultation SHA recommended that three open houses and/or pop-up booths be implemented: one open house each in Masset, Daajing Giids and Prince Rupert at the end of September 2021 (19<sup>th</sup> to 23<sup>rd</sup>) and pop-up booths within the same week in all municipalities if possible.

The difference between a pre-arranged and advertised open house and a spontaneous pop-up booth is the open house is usually inside, advertisements are distributed, and story boards can be set up around the room attended by staff and consultants to receive and record input. The Masset Library, Daajing Giids Community Club and Prince Rupert Library Multi-Purpose Room were spaces that were considered useful for this type of two-to-four-hour evening event.

A pop-up booth would be spontaneous and at locations where residents frequent on a regular basis such as a grocery store over a four-to-six-hour period. The booth attendees would speak to residents as they passed by with the hope of providing information about the draft SWMP and gaining feedback and support for the initiatives portrayed on posters at the booth. This one-on-one engagement can often be just as good as a public meeting in a room of a few attendees.

SHA prepared the story boards and announcements for public distribution, attended all events and recorded input. A record of the public meetings was kept and consolidated into the final Public Consultation Report. SHA also arranged a virtual public meeting, distributed the announcement through the NCRD website and local social and regular media and presented a Power Point Presentation to the Zoom Meeting attendees.

For the second round of consultation, SHA envisions similar engagement as round one. Because attendance was considered very low, we will first consult with the PTAC members to garner ideas and suggestions to increase participation. Potential examples include the consultation team attending member municipalities' and First Nation's council meetings where the public is invited, organizing 'café talks' at several establishments with extensive pre-publication of these events, and/or attending public events that are already planned for communities such as farmers markets and festivals. The specific events will be finalized with the PTAC members and NCRD staff after release of the second draft SWMP.

It will also be important to re-engage all elected officials and stakeholders individually with a written request as soon as the second draft SWMP is released, asking them for individual feedback on the revised initiatives. It is our impression that the new initiatives will entice more input and feedback as they involve changes to services that may not be broadly palatable.

## **5 STRATEGY DECISIONS AND LEVEL OF PUBLIC SUPPORT**

It is envisioned that the results of surveys, public meetings and individually solicited feedback will help solidify the direction of the final SWMP strategies and initiatives. The feedback from the public, elected officials and stakeholders will be used to help inform the level of potential change to the solid waste management services that will be implemented over the next 10 years.

Following the final SWMP development, a Public Consultation Report will be completed outlining the steps taken to ensure adequate and effective consultation. This report will accompany the SWMP for final submission to ENV.

## **6 PLAN IMPLEMENTATION**

After the SWMP is approved by the Minister, it is recommended that a Plan Monitoring Advisory Committee (PMAC) monitor the implementation of the plan and make regular recommendations to the NCRD Board of Directors to increase Plan effectiveness.

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**APPENDIX B**  
**1996 Solid Waste Management Plan Status**

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

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

Initiative	Topic	Description	NCRD & SHA 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 mainland 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.	Not occurring but combine with other initiatives to carry forward
M2.1.4	Tipping Fees	Volume based tipping fees described in Appendix M4 be collected at the landfill.	Yes.

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Initiative	Topic	Description	NCRD & SHA Comments
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. No response
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 recycling 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.	Not undertaken. Combine with food waste diversion initiative in SWMP Review
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.	Not undertaken. Combine with other food waste diversion initiatives in SWMP Review
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.

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<b>Initiative</b>	<b>Topic</b>	<b>Description</b>	<b>NCRD &amp; SHA Comments</b>
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.
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.

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Summary of Initiatives**

Initiative	Topic	Description	NCRD & SHA Comments
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.	Steel plates used on stie
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.	Include in SWMP Review - storage areas are getting full
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. Add to SWMP Review
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.	Has not been completed. Do not assess

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Initiative	Topic	Description	NCRD & SHA Comments
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.
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.



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Initiative	Topic	Description	NCRD & SHA Comments
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.	Was not able to find information on DoPE. Will follow up. <a href="http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping">http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping</a> Dumping has not been an issue in other areas of the RD thus far. Combine with RM-4
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 quarterly 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): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 3) Senior Government grants.	Yes. Bylaw provided.
11.1.1	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.

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Initiative	Topic	Description	NCRD & SHA Comments
11.1.2	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.
11.1.3	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.
11.1.4	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.
11.2.1	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.
12.1.2	Landfill Operation	Operate the landfill site according to the Landfill Plan.	Yes.
12.1.3	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.
12.1.4	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.
12.1.5	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.
12.1.6	Review	Review the data from the Environmental Monitoring program and determine whether amendments are required to Appendix I-2	Yes. Periodically.
12.2.1	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.
12.2.2	Transfer of Sites and Permits	Prior to the final closure plans have been prepared Skidegate and Sandspit Landfills, the Regional District will 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.

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<b>Initiative</b>	<b>Topic</b>	<b>Description</b>	<b>NCRD &amp; SHA Comments</b>
I2.2.3	Transfer Site Permits	Negotiate with the Ministry of Environment for an amendment of the transfer site permits for the following uses: 1) Transfer sites for temporary storage of municipal waste 2) Septage disposal (Sandspit only) 3) Burning sites for some categories of demolition waste 4) Other demolition wastes that could be used on site as fill or cover material. 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.
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 ISWAC 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.

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Initiative	Topic	Description	NCRD & SHA Comments
I3.1.4	Service Areas	Local refuse collection systems be established for the following service areas (Fig 8): 1) Moresby Island 2) Queen Charlotte City/Skidegate including all areas south of Chinukundl Creek 3) Port Clements/Tlell including all areas south of including Nadu Road to north of Chinukundl Creek 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: 1) They provide an alternative compulsory collection service to all their residents; 2) They have the same level of fee surcharges for additional volumes of garbage as stated in the plan; and 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 divided to determine a quarterly collection billing fee.	Not currently used as practice for determining rates. Collection rates were increased based on inflationary cost adjustments in 2020. Prior to that, I'm not aware of any rate changes for this fee.

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Initiative	Topic	Description	NCRD & SHA Comments
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: 1) revenue equivalent to the volume (less the regular contract) at the transfer station or landfill will be added to the contract payment; and 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. 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): 1) Mas set Transfer Station 2) Port Clements Regional Landfill 3) Skidegate Transfer Station 4) Sandspit Transfer Station	Hours for facilities are as follows: <a href="https://www.ncrdbc.com/services/waste/landfill-transfer-stations">https://www.ncrdbc.com/services/waste/landfill-transfer-stations</a>
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 1-5) is to be part of the contract awarded for local collection.	Carry forward
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. Carry forward
I4.1.7	Sandspit Septage Disposal	The Septage disposal area will continue to be permitted at the Sandspit Transfer Station.	Yes.

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Initiative	Topic	Description	NCRD & SHA Comments
14.1.8	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.	Carry forward with residuals management initiatives
14.1.9	Collection of Fees	The miniatous contractor shall collect fees from the public as specified in Appendix I-3.	Yes.
14.2.1	Use of Fees	Fees collected shall be applied in accordance with Appendix I-3	Update fees bylaw as necessary
14.2.2	Capital Cost	The initial capital costs of the transfer stations be funded by: 1) Provincial Rural Waste Management Grants; 2) Taxation; and 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.
14.2.3	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.
14.2.4	Operating Costs	Operating costs for the Transfer station will be paid from: 1) user charges according to Policy 1-4.2.2; and 2) monthly charges applied to all collection units as in Policy 1-3.1.6.	Yes. Current cost recovery may not be adequate.
14.2.5	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.
15.1.1	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.
15.1.2	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.	Carry forward as part of system efficiency
15.1.3	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.
15.2.1	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.	Carry forward as part of system efficiency
15.2.2	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.

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<b>Initiative</b>	<b>Topic</b>	<b>Description</b>	<b>NCRD &amp; SHA Comments</b>
16.1.1	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. Reserve funds are being set up for a variety of needs
16.1.2	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.
16.1.3	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.
16.1.4	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.
16.1.5	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. Other reserves set up as needed
16.1.6	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.
16.1.7	Problem Waste List Review	ILSWAC shall review Appendix I-3 annually and recommend changes to the Regional District Board.	Wastes are reviewed periodically but has been a while. ISWAC not currently established. Combined with problem waste initiative
16.2.1	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.
17.1.1	Education	The Island Coordinator will organize regular solid waste and recycling waste reduction education programs for schools, local government and other interested groups.	No.
17.1.2	Funding	Apply to BC Environment for funds to assist in support in providing waste reduction education.	Carry forward to other funding initiatives
18.1	Backyard Composters	Backyard composting will be encouraged and subsidized from time to time with funds provided by the Provincial Government and from the Recycling Reserve.	No. Combine with organics diversion initiative
18.2	Other Composting	ISWAC will encourage initiatives for commercial and backyard composting operations by providing information on composter design and operation.	No. Combine with other organics diversion initiatives

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Initiative	Topic	Description	NCRD & SHA Comments
19.1.1	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. Set up reserve funds specific to problem waste removal
19.1.2	Problem Waste Coordinator	The Islands Coordinator will facilitate the proper disposal of problem wastes by : a) being conversant with regulations governing the storage and haulage of special waste; and 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. Quotes received but a very costly item. Carry forward to SWMP
19.1.3	General Recycling Support	ISWAC 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. Combine with other 3Rs initiatives
19.1.4	Recycling 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 purchase the needed equipment. <a href="https://www.ncrdbc.com/about-us/news-notices/village-masset-recycling-depot-opening-august-13-2021">https://www.ncrdbc.com/about-us/news-notices/village-masset-recycling-depot-opening-august-13-2021</a>
19.1.5	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.
19.1.6	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 coordinating recycling activities. Combine with other 3Rs initiatives
19.1.7	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.
110.1.1	Schedules	Implement the plan according to the schedules presented in Fig 9	Yes - for the most part.
110.1.2	Responsibility	Responsibility for implementing various components of the plan will be according to Figure 10	Yes.



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

Initiative	Topic	Description	NCRD & SHA Comments
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: 1) publish photos of incidents; 2) identify the owners of the illegally dumped refuse and bill them for the proper disposal; and 3) the adoption of an illegal dumping bylaw with a schedule of fines for various infractions.	Not currently taking place. ISWAC not meeting. Carry item forward to SWMP and consider a policy
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 Committee currently but bring forward to SWMP review
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: 1) ISW AC, 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 in ISW service have not arisen recently

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

<b>Initiative</b>	<b>Topic</b>	<b>Description</b>	<b>NCRD &amp; SHA Comments</b>
I10.5.1	Funding Sources	Required funds are to be raised from (figure 11): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 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.

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**APPENDIX C**  
**Technical Memorandum No. 1, Waste Diversion & Recycling**

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# 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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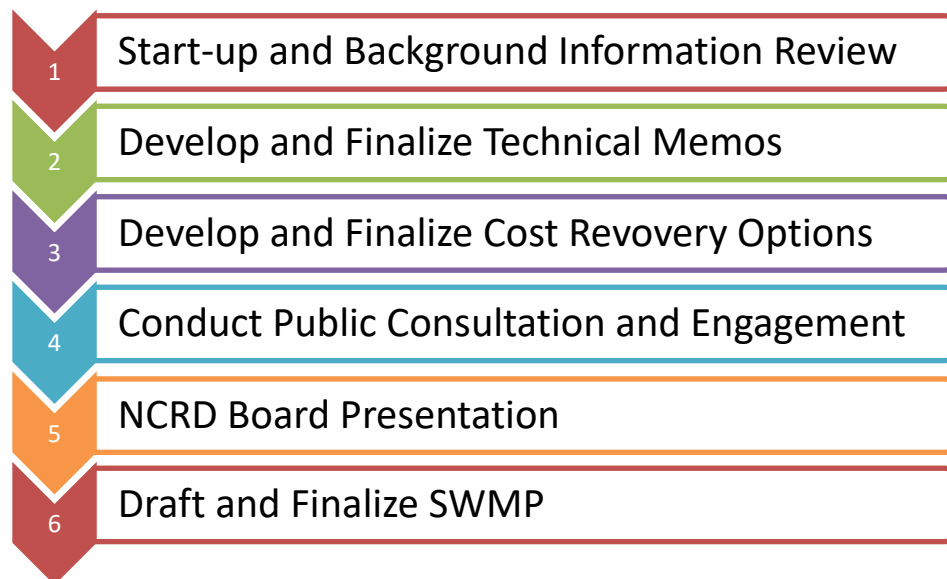
## Glossary of Terms

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 the 1996 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

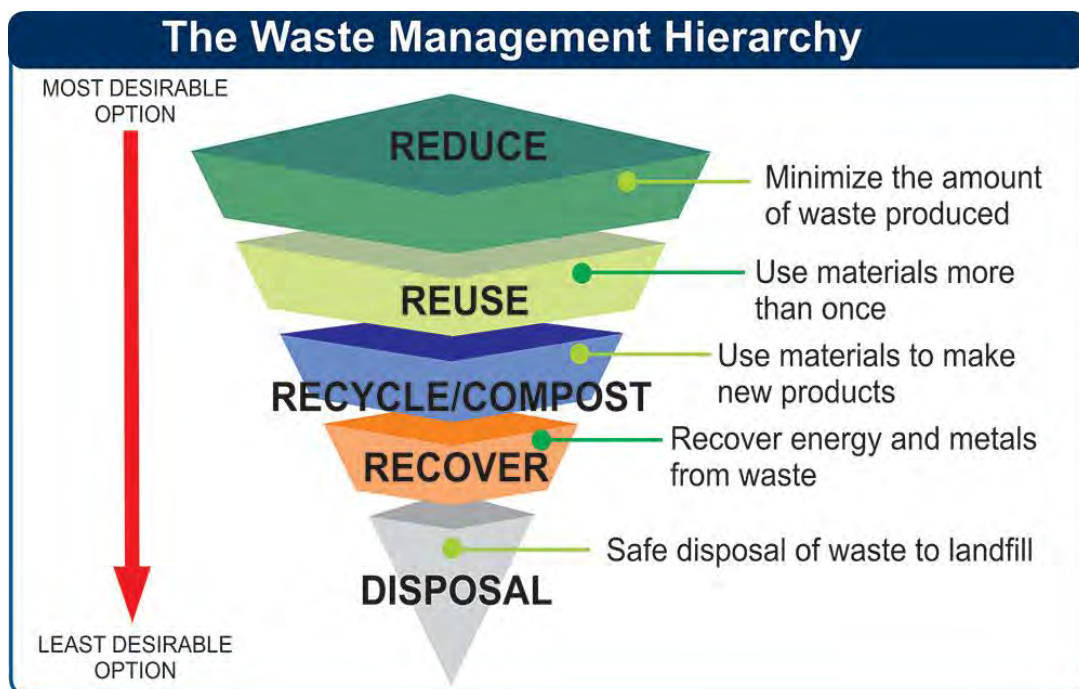
With amendments to the Waste Management Act (now Environmental Management Act) in 1989 the province required all Local Governments to develop a SWMP for approval by 1995 that would help British Columbia (BC) achieve a 50% reduction in municipal solid waste (MSW) disposal by the year 2000. As stated in 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.

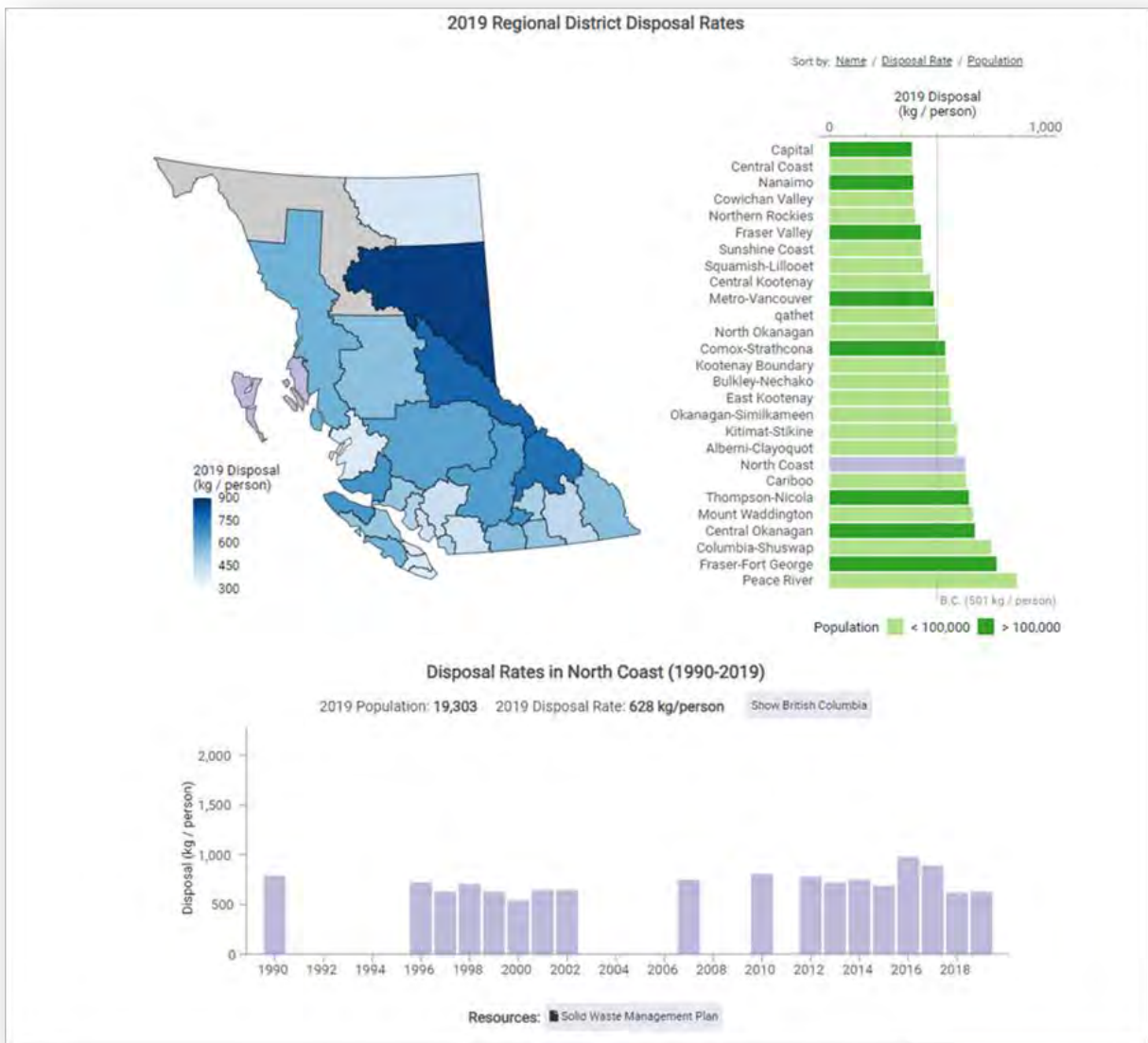
The NCRD reported their MSW disposal rate in 2019 to be 628 kg per person per year as shown below compared to the provincial average of 501 kg. The 2021 disposal quantity is reported to be 12,894 tonnes as shown in Table 1 below. With a 2021 population of 18,181 based on the 2021 Census (see Table 2) 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
<b>Prince Rupert Landfill</b>							
	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		
<b>Total Mainland Refuse</b>					11,334		
<b>2021 Tonnes</b>							11,334
<b>Mainland 2021 Census Population</b>							13,510
<b>2021 tonnes/per capita/year</b>							0.84
<b>Islands Landfill</b>							
	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	
<b>Total Islands Refuse - not including C&amp;D that was used to build berm</b>					1,560	7,799	
<b>2021 Tonnes</b>							1,560
<b>Islands 2021 Census Population</b>							4,582
<b>2021 tonnes/per capita/year</b>							0.34
<b>Total for NCRD</b>							
<b>2021 Tonnes</b>							12,894
<b>2021 Census Population</b>							18,181
<b>2021 tonnes/per capita/year</b>							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:

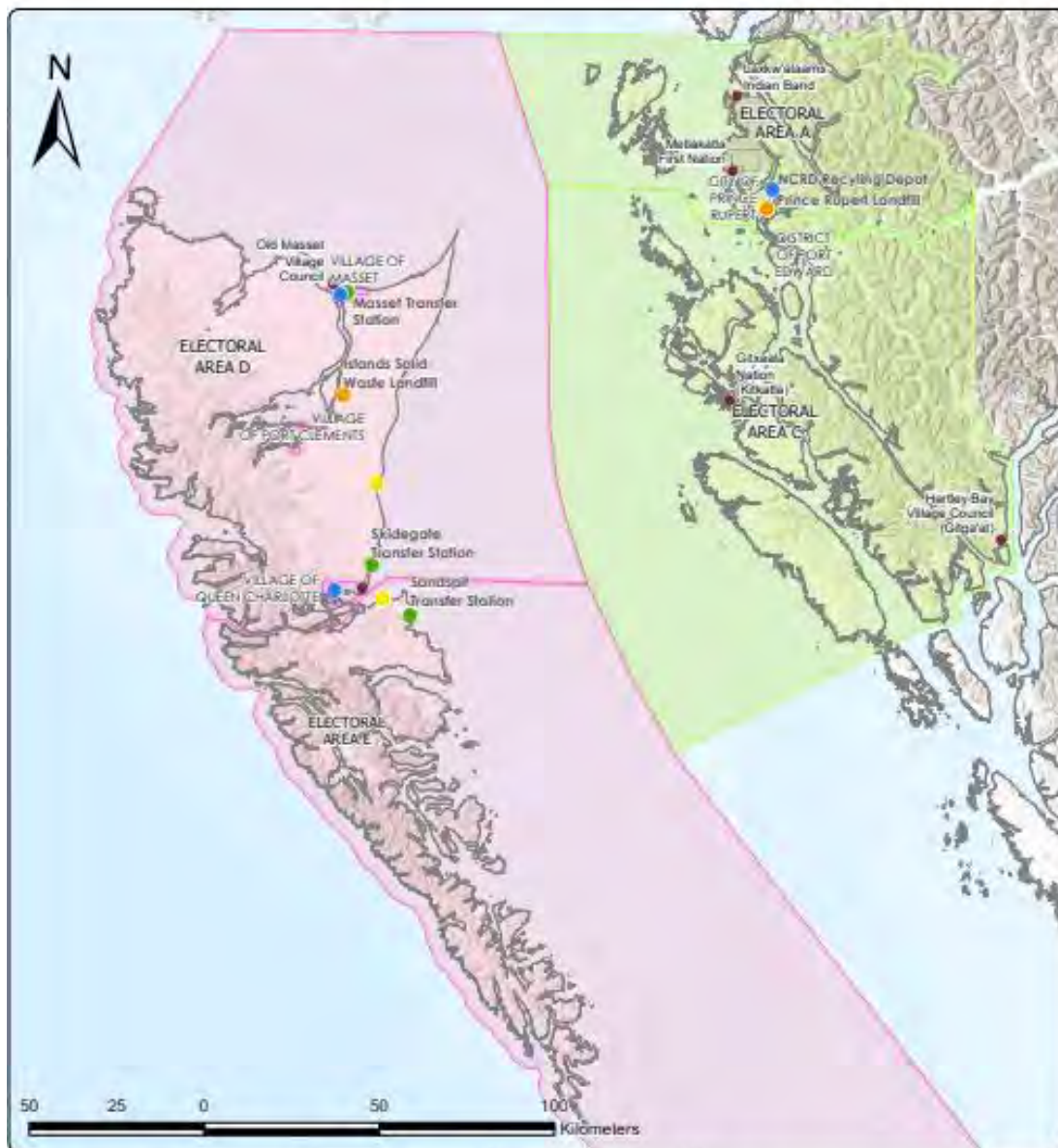
1. Implement this plan in a way that will minimize inconvenience to residents
2. Ensure that possible negative reactions to some plan policies are addressed during implementation

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).



 <p><b>SPERLING HANSEN ASSOCIATES</b></p> <p>Landfill Services Group</p> <ul style="list-style-type: none"> <li>• Landfill Siting</li> <li>• Design &amp; Operational Plans</li> <li>• Landfill Closure</li> <li>• Environmental Monitoring</li> </ul> <p>83 - 1225 Keith Road North Vancouver, B.C. V7J 1J3</p> <p>Phone: (604) 985-7723 Fax: (604) 985-7734</p>	<p>CLIENT:</p>  <p><b>NORTH COAST REGIONAL DISTRICT</b></p>	<p>PROJECT:</p> <p><b>North Coast Regional District SWMP Update</b></p>	<p>TITLE:</p> <p><b>North Coast Regional District Solid Waste Management Areas &amp; Facilities</b></p>																
	<p>LEGEND:</p> <ul style="list-style-type: none"> <li>• First Nations Communities</li> <li>• Landfill</li> <li>• Recycle Bin</li> <li>• Recycle Depot</li> <li>• Transfer Station</li> <li>• Islands Waste Management Area</li> <li>• Mainland Waste Management Area</li> </ul>	<table border="1"> <tr> <td>SCALE</td> <td>DATE</td> <td>PROJECT NO.</td> </tr> <tr> <td>1:1,700,000</td> <td>2022/02/16</td> <td>PRJ 21104</td> </tr> <tr> <td>DESIGNED</td> <td>NA</td> <td>PROJECTION:</td> </tr> <tr> <td>DRAWN</td> <td>NEJ</td> <td>NAD 1983 UTM Zone 9N</td> </tr> <tr> <td>CHECKED</td> <td>AK</td> <td>DRAWING NO.</td> </tr> <tr> <td></td> <td></td> <td><b>FIGURE 5</b></td> </tr> </table>	SCALE	DATE	PROJECT NO.	1:1,700,000	2022/02/16	PRJ 21104	DESIGNED	NA	PROJECTION:	DRAWN	NEJ	NAD 1983 UTM Zone 9N	CHECKED	AK	DRAWING NO.		
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DESIGNED	NA	PROJECTION:																	
DRAWN	NEJ	NAD 1983 UTM Zone 9N																	
CHECKED	AK	DRAWING NO.																	
		<b>FIGURE 5</b>																	

**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
<b>Calculated Total</b>	<b>18,092</b>	<b>8,880</b>	<b>7,482</b>
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
<b>Subtotal Mainland</b>	<b>1,134</b>	<b>568</b>	<b>390</b>
Masset 1 (Old Massett - Haida) *	838	241	195
Skidegate 1 *EA-D	697	331	296
<b>Subtotal Islands</b>	<b>1,535</b>	<b>572</b>	<b>491</b>
<b>Total</b>	<b>2,669</b>	<b>1,140</b>	<b>881</b>

**\*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 Liquefied 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	
<b>First Nations</b>	<b>Municipalities</b>
<ul style="list-style-type: none"> <li>• Gitga'at First Nation</li> <li>• Gitxaala First Nation</li> <li>• Kitselas First Nation</li> <li>• Kitsumkalum First Nations</li> <li>• Lax Kw'alaams Band</li> <li>• Metlakatla First Nation</li> <li>• Old Massett Village Council</li> <li>• Skidegate Band Council</li> <li>• Council of the Haida Nation</li> </ul>	<ul style="list-style-type: none"> <li>• City of Prince Rupert</li> <li>• District of Port Edward</li> <li>• Village of Queen Charlotte</li> <li>• Village of Port Clements</li> <li>• Village of Masset</li> </ul>
<b>Commercial Haulers</b>	<b>Industry and Government Agencies</b>
<ul style="list-style-type: none"> <li>• Big Red Enterprises</li> <li>• Clearbrook Trucking</li> <li>• Jims Mowing</li> <li>• Skeena Waste and Recycling</li> <li>• Rupert Disposal</li> <li>• Tickers Hauling</li> </ul>	<ul style="list-style-type: none"> <li>• Port of Prince Rupert</li> <li>• Prince Rupert Grain</li> <li>• Ridley Terminals</li> <li>• DP World Prince Rupert</li> <li>• BC Ferries</li> <li>• BC Government Ministries</li> </ul>
	<b>Interest Groups</b>
	<ul style="list-style-type: none"> <li>• Prince Rupert Environmental Society</li> <li>• Dirt Nerd Soil Company</li> </ul>
	<b>Institutions</b>
	<ul style="list-style-type: none"> <li>• School District 50 and 52</li> <li>• Northern Health Facilities</li> </ul>

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)
<b>Category</b>										
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	Hazardous (including pathogenic and radioactive wastes)
Slurry (except as permitted)	"Hazardous Wastes" as defined by the Environmental Management Act (BC)
Empty steel and plastic drums, unless they are crushed, shredded or similarly reduced in volume to the maximum practical extent	Any substance prescribed as "waste" by regulation under the Environmental Management Act
Ignitable waste	
Radioactive waste	Non-sterilized biomedical waste
Special waste (except as permitted)	Explosive substances
Refuse that is on fire or smouldering	Chemicals or other materials which may create hazardous working conditions
Explosives	Inflammable materials
Industrial chemical waste	
Lead acid batteries (except as permitted)	Ashes or other materials hot enough to start combustion
Small tires or large tires mounted on rims	Waste oil, petroleum by-products, used oil filters or equipment lubricant filters.
Ozone depleting substances except as permitted herein.	Contaminated water waste
	All forms of excrement excluding minor amounts of domestic pet waste.
	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
	<p>Creosote painted/pressure treated materials</p> <p>Contaminated soils unacceptable to the Director of Operations</p> <p>Tires</p> <p>Commercial loads of dry cell batteries</p> <p>Corrugated cardboard from commercial sources</p> <p>White goods</p> <p>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.</p> <p>Some prohibited materials may be accepted in small quantities for recycling</p> <p>Wire rope</p>

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	Recycle BC
<ul style="list-style-type: none"> <li>• Paint</li> <li>• Household Hazardous Waste</li> <li>• Residential Lights</li> <li>• Commercial Lights</li> <li>• Residential Fixtures</li> <li>• Non-PCB Ballasts</li> <li>• Smoke Detectors and CO Alarms</li> </ul>	<ul style="list-style-type: none"> <li>• Cardboard Boxes</li> <li>• Cartons and Paper Cups</li> <li>• Foam Packages</li> <li>• Glass Bottles and Jars</li> <li>• Metal Containers</li> <li>• Other Flexible Plastic Packaging</li> <li>• Paper Packaging</li> </ul>
ElectroRecycle	<ul style="list-style-type: none"> <li>• Plastic Bags and Overwrap</li> </ul>

Product Steward and Materials Accepted at the NCRD Recycling Depot

- Small Appliances and Power Tools
- Oversized Items (i.e., treadmills, elliptical machines, demolition power tools)

- Plastic Containers
- Printed Paper

MARR

Tire Stewardship BC

- Car, Light Truck & Motorcycle Tires

- Large Household Appliances Air Conditioners, Dehumidifiers, Stoves, Ovens

OPEI Canada

- Handheld, Walk Behind and Free-Standing
- Electric Outdoor Power Equipment
- Tractors

Call2Recycle

- Refrigerators, Dishwashers

- Rechargeable Batteries
- Alkaline and Single-Use Batteries

Return-It

- Small Appliances
- 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 2<sup>nd</sup> 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
<b>Total Kgs</b>	<b>2,168,080</b>	<b>2,111,000</b>	<b>2,377,046</b>	<b>2,384,267</b>	<b>2,399,879</b>
<b>Total Tonnes</b>	<b>2,171</b>	<b>2,112</b>	<b>2,378</b>	<b>2,392</b>	<b>2,401</b>

## 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  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:  Moresby Island  Queen Charlotte City and Skidegate Landing  Chinukundl Creek to Tlell  Port Clements to Nadu Road  Village of Masset and Graham Island North/Towhill Road, South of Masset to Pure Lake
Gitga'at First Nation  (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  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  Collection of user fees by the Village of Port Clements on behalf of the NCRD



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

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 multi-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**

<b>Initiative</b>	<b>Waste Reduction, Reuse and Recycling</b>	<b>Diversion Potential (Tonnes)</b>
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
<b>Total waste diversion potential</b>		<b>2,530</b>

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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

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**APPENDIX A**  
**1996 Solid Waste Management Plan Initiatives Status**

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

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

<b>Initiative</b>	<b>Topic</b>	<b>Description</b>	<b>NCRD Comments</b>
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.

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

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 recycling 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.



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

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.	

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

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.

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

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. <a href="http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping">http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping</a> 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 quarterly 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): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 3) Senior Government grants.	Yes. Bylaw provided.
11.1.1	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.
11.1.2	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.

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

11.1.3	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.
11.1.4	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.
11.2.1	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.
12.1.2	Landfill Operation	Operate the landfill site according to the Landfill Plan.	Yes.
12.1.3	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.
12.1.4	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.
12.1.5	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.
12.1.6	Review	Review the data from the Environmental Monitoring program and determine whether amendments are required to Appendix I-2	Yes. Periodically.
12.2.1	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.
12.2.2	Transfer of Sites and Permits	Prior to the final closure plans have been prepared Skidegate and Sandspit Landfills, the Regional District will 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.
12.2.3	Transfer Site Permits	Negotiate with the Ministry of Environment for an amendment of the transfer site permits for the following uses: 1) Transfer sites for temporary storage of municipal waste 2) Septage disposal (Sandspit only) 3) Burning sites for some categories of demolition waste 4) Other demolition wastes that could be used on site as fill or cover material. 5) Temporary storage areas for auto hulks, tires and white goods	Yes.
12.3.1	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.

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

12.3.2	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.
12.3.3	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.
12.3.4	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.
13.1.1	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.
13.1.2	Other Users	Invite BC Parks and the Ministry of Highways participate in the regular collection service for their roadside refuse containers.	
13.1.3	Weekly Service	All collection units enumerated will be provided with a weekly refuse collection service.	Yes. All units accessible by road.
13.1.4	Service Areas	Local refuse collection systems be established for the following service areas (Fig 8): 1) Moresby Island 2) Queen Charlotte City/Skidegate including all areas south of Chinukundl Creek 3) Port Clements/Tlell including all areas south of including Nadu Road to north of Chinukundl Creek 4) Masset/Old Massett including areas north of Nadu Road and Tow Hill Road.	Yes.
13.1.5	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: 1) They provide an alternative compulsory collection service to all their residents; 2) They have the same level of fee surcharges for additional volumes of garbage as stated in the plan; and 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.
13.1.6	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
13.1.7	Collection Contract	Tender each local service area for weekly refuse service.	Yes - agreement provided.
13.1.8	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.
13.1.9	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.

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

13.1.10	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.
13.1.11	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 divided to determine a quarterly collection billing fee.	Not currently used as practice for determining rates. Collection rates were increased based on inflationary cost adjustments in 2020. Prior to that, I'm not aware of any rate changes for this fee.
13.1.12	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.
13.1.13	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.
13.1.14	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.
13.2.2	Optional Commercial Collection	Successful bidders for local collection contracts be given the option of having the Regional District collect fees for additional services that: 1) revenue equivalent to the volume (less the regular contract) at the transfer station or landfill will be added to the contract payment; and 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.
14.1.1	Transfer Station Sites	Provide facilities open to the general public during hours in Appendix 4 at the following locations (figure 8): 1) Mas set Transfer Station 2) Port Clements Regional Landfill 3) Skidegate Transfer Station 4) Sandspit Transfer Station	Hours for facilities are as follows: <a href="https://www.ncrdbc.com/services/waste/landfill-transfer-stations">https://www.ncrdbc.com/services/waste/landfill-transfer-stations</a>
14.1.2	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.
14.1.3	Standard Size	The transfer stations shall be designed to accommodate 50 yd3 roll-off bins.	The NCRD owns the roll off bins.
14.1.4	Maintenance	Maintenance of the transfer stations (as specified in Appendix 1-5) is to be part of the contract awarded for local collection.	

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

14.1.5	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.
14.1.6	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.
14.1.7	Sandspit Septage Disposal	The Septage disposal area will continue to be permitted at the Sandspit Transfer Station.	Yes.
14.1.8	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.	
14.1.9	Collection of Fees	The miniatous contractor shall collect fees from the public as specified in Appendix I-3.	Yes.
14.2.1	Use of Fees	Fees collected shall be applied in accordance with Appendix I-3	
14.2.2	Capital Cost	The initial capital costs of the transfer stations be funded by: 1) Provincial Rural Waste Management Grants; 2) Taxation; and 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.
14.2.3	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.
14.2.4	Operating Costs	Operating costs for the Transfer station will be paid from: 1) user charges according to Policy 1-4.2.2; and 2) monthly charges applied to all collection units as in Policy 1-3.1.6.	Yes. Current cost recovery may not be adequate.
14.2.5	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.
15.1.1	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.
15.1.2	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.	
15.1.3	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.
15.2.1	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.	
15.2.2	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.

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

16.1.1	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.
16.1.2	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.
16.1.3	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.
16.1.4	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.
16.1.5	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.
16.1.6	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.
16.1.7	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.
16.2.1	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.
17.1.1	Education	The Island Coordinator will organize regular solid waste and recycling waste reduction education programs for schools, local government and other interested groups.	No.
17.1.2	Funding	Apply to BC Environment for funds to assist in support in providing waste reduction education.	No.
18.1	Backyard Composters	Backyard composting will be encouraged and subsidized from time to time with funds provided by the Provincial Government and from the Recycling Reserve.	No.
18.2	Other Composting	ISWAC will encourage initiatives for commercial and backyard composting operations by providing information on composter design and operation.	No.
19.1.1	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.
19.1.2	Problem Waste Coordinator	The Islands Coordinator will facilitate the proper disposal of problem wastes by : a) being conversant with regulations governing the storage and haulage of special waste; and 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.



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

19.1.3	General Recycling Support	ISWAC 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.
19.1.4	Recycling 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 purchase the needed equipment. <a href="https://www.ncrdbc.com/about-us/news-notice/village-masset-recycling-depot-opening-august-13-2021">https://www.ncrdbc.com/about-us/news-notice/village-masset-recycling-depot-opening-august-13-2021</a>
19.1.5	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.
19.1.6	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 coordinating recycling activities.
19.1.7	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.
110.1.1	Schedules	Implement the plan according to the schedules presented in Fig 9	Yes - for the most part.
110.1.2	Responsibility	Responsibility for implementing various components of the plan will be according to Figure 10	Yes.
110.2.1	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.
110.2.2	Strategies to Prevent Illegal Dumping	ISWAC will review incidents of illegal dumping and recommend the implementation of one or all of the following strategies: 1) publish photos of incidents; 2) identify the owners of the illegally dumped refuse and bill them for the proper disposal; and 3) the adoption of an illegal dumping bylaw with a schedule of fines for various infractions.	Not currently taking place. ISWAC not meeting.
110.2.4	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.
110.3.1	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.
110.3.2	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.

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

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: 1 )ISW AC, 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 in ISW service have not arisen during my tenure.
I10.5.1	Funding Sources	Required funds are to be raised from (figure 11): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 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.

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**APPENDIX B**  
**Rate Schedules and Brochures**

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**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
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#### **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)	<b>Not accepted at Transfer Stations</b>	
Vehicle hulks with fluids	<b>Not accepted at Transfer Stations</b>	
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
<b>CITY COLLECTION FEES</b>			
<b>Residential Collection Service</b>			
Per dwelling unit, minimum <b>annual</b> charge for collection of solid waste	\$518.04	\$528.40	\$538.97
Per dwelling unit, additional <b>annual</b> charge for 240L refuse collection	\$100.00	\$102.00	\$104.04
Per dwelling unit for single Owner/Strata with >20 dwellings <b>quarterly</b> charge for collection of solid waste	\$129.51	\$132.10	\$134.74
<b>Commercial Collection Service</b>			
Minimum <b>quarterly</b> 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
<b>Container Fees (per sections 3.7, 3.8, and 5.10)</b>			
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
<b>Specific Penalties (per sections 12.5 and 12.6)</b>			
Failure to use approved <i>container</i> for curbside collection of <i>solid waste</i>	\$50.00	\$50.00	\$50.00
Overfilling of <i>containers</i> beyond lid height causing materials to spill	\$50.00	\$50.00	\$50.00
Placement of contaminating materials in <i>curbside recycling containers</i>	\$50.00	\$50.00	\$50.00
Minimum charge for cleanup on City property	\$150.00	\$150.00	\$150.00

		2022	2023	2024
<b>USE OF DISPOSAL SITE – CASH RATES</b>				
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.				
<b>General Waste Disposal</b>				
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
<b>Controlled Waste Weekdays</b>				
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
<b>Controlled Waste Weekends/Holidays</b>				
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				
<b>Non Operational Scale Fees</b>				
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
<b>Non-Operational Scale Fees Continued</b>				
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
<b>USE OF RECYCLABLE SITE – CASH RATES</b>				
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
<b>OTHER LANDFILL SITE CHARGES – CASH RATES</b>				
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

<b>UNCOVERED OR INSECURE LOADS</b>
General Waste Disposal fees will be doubled when Commercial Vehicles attend the disposal site with an uncovered or an insecure load.
<b>NON-PROFIT ORGANIZATIONS FEE</b>
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 <i>Director of Operations</i> 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.
<b>INVOICE RATES – LANDFILL SITE</b>
Invoice rates will be 12% higher than the cash rate identified in this Schedule.
<b>BILLING AND EARLY PAYMENT REWARD</b>
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.
<b>UNPAID FEES AND CHARGES</b>
Any amounts imposed under this Schedule remaining unpaid on the thirty-first (31 <sup>st</sup> ) 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

## Prohibited Materials

(CONTINUED FROM PREVIOUS PAGE)

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

Sea Sport Marina  
www.opec.ca  
295 – 1<sup>st</sup> 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



# 2020 Fees and Charges

Material	'RESIDENT' Rates Cash/Credit Card/ Debit	Invoiced Rates
<b>General Refuse</b>	\$148.90 / tonne	\$166.80 / tonne
<b>Automobiles (for disposal)</b>	\$46.80 / tonne	\$50.95 / tonne
<b>Recyclable Material</b>	\$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)	"	"
<b>Liquid Waste</b>	\$9.50 / tonne	\$10.60 / tonne
<b>Grain</b>	\$26.50 / load	\$29.70 / load
<b>Cover</b> (dry mineral soil)	\$26.50 / load	\$29.70 / load
<b>The following products (*) require immediate burial; approval for each load must be obtained in advance</b>		
* <b>Asbestos</b>	\$351.90 / tonne	\$382.70 / tonne
* <b>High Risk</b>	"	"
* <b>Animals</b>	"	"
* <b>International Refuse</b>	"	"
* <b>Commercial Fish Waste</b>	\$499.80 / tonne	\$559.80 / tonne
<b>Scale Use (printed receipt)</b>	\$26.50 ea	\$29.70 ea
<b>After Hours Administration Fee</b>	\$365.15 ea	\$365.15 ea
<b>White Goods Fee (major appliances)</b>	\$550.00 ea	\$550.00 ea
<b>Prohibited Waste / Excess Cardboard</b>	\$550.00 ea	\$550.00 ea
<b>Improperly Secured Load &amp; Excess Cardboard Fines</b>	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.

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**APPENDIX D**  
**Technical Memorandum No. 2, Residuals Management**

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# SOLID WASTE MANAGEMENT PLAN UPDATE



## **DRAFT Technical Memorandum No. 2: RESIDUALS MANAGEMENT**

**May 2022**

**Submitted By: Sperling Hansen Associates**

Revisions:

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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.

Sperling Hansen Associates (SHA) was hired in November 2021 to assist with the SWMP update to its final submission to the ENV in 2023. This Technical Memorandum (TM) is part of Task 2 (Develop and Finalize Technical Memos) as outlined in SHA's project proposal and aligns with Step 2 and Step 3 of the Province's 2016 Guide to Solid Waste Management Planning (Guide) and will be presented to the NCRD's Public and Technical Advisory Committee for review and discussion.

## 2 CONTEXT AND SCOPE

This second TM provides the following:

- Based on information provided by NCRD staff, current refuse collection and disposal programs, facilities, capacity and associated quantities managed
- The topics chosen to be reviewed by PTAC relating to residuals management
- Residuals management initiatives to be reviewed at the Public and Technical Advisory Committee (PTAC) meetings and added to the draft SWMP.

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 collection and disposal system in the Islands and Mainland service areas including the 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 88 of their 137 initiatives that relate to solid waste disposal as described further below. Nine of these initiatives are ongoing and will be carried forward to the updated SWMP. Five initiatives relating to waste disposal have not been completed but will be carried forward and six initiatives that have not been completed will not be carried forward. The list of initiatives is presented in Appendix A with the following color coding:

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

#### 2.1.1 Guiding Principles for Waste Disposal

As reviewed in Technical Memo 1, 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 topics relating to

waste disposal were put forward by the NCRD Public and Technical Advisory Committee (PTAC) early in the process:

1. Implement this plan in a way that will maximize convenience 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 the following:
  - a) Improving the operational and financial efficiency of the NCRD waste management systems
  - b) Continuing to monitor solid waste management facilities and services
  - c) Maintaining and improving relationships with large waste generators
  - d) Improving service delivery to rural communities
  - e) Setting limits on municipal-type solid waste (MSW) from industry and outside the NCRD
  - f) Providing access to services/facilities in other service areas within the NCRD (e.g. industry and work camp waste)
  - g) Managing contaminated soil
  - h) Investigating landfill gas utilization and carbon credits
  - i) Considering strategies to assist in the prevention of illegal dumping
  - j) Setting parameters for acceptable liquid waste brought to NCRD solid waste facilities (e.g. sewage system grit, grease trap waste).

The above list is not exhaustive and can be modified prior to development of the draft SWMP and presentation to the public during consultation. Note that items a) through d) are also considered under the waste diversion strategy options.

## **2.2 Provincial and Local Targets**

The ENV's current Service Plan outlines the following provincial targets for 2022 to 2025:

**Table 1 - Provincial Service Plan Disposal Targets**

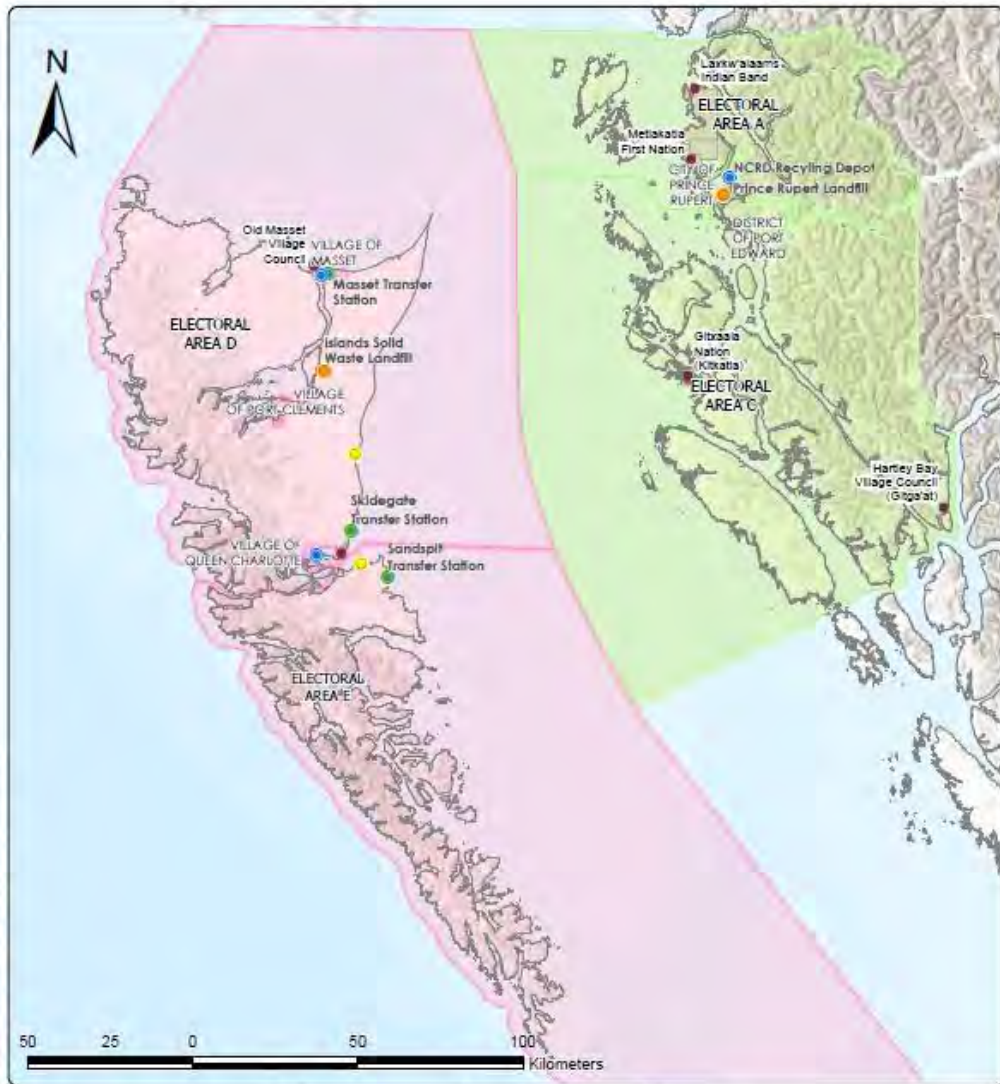
Target	2022/2023	2023/2024	2024/2025
Per capita municipal solid waste disposal (kg per person)	460	440	420
Per cent of population covered by an organic waste disposal restriction (%)	80	80	80

ENV collects disposal data from regional districts in BC on an annual basis through their Disposal Calculator program. The NCRD reported their MSW disposal rate in 2019 to be 628 kg per person per year compared to the provincial average of 501 kg. The 2021 disposal quantity is reported to be 12,894 tonnes as shown in Table 2 below. With a 2021 population of 18,181 based on the 2021 Census the current NCRD disposal rate is estimated to be **710 kg per person per year**.

**Table 2 - Disposed Quantities**

Location	Material Type	Source	Refined Source (SHA)	Refined Type (SHA)	Tonnes	Cubic Meters	Annual Waste Statistics
<b>Prince Rupert Landfill</b>							
	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		
<b>Total Mainland Refuse</b>					11,334		
						<b>2021 Tonnes</b>	11,334
						<b>Mainland 2021 Census Population</b>	13,510
						<b>2021 tonnes/per capita/year</b>	0.84
<b>Islands Landfill</b>							
	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	
<b>Total Islands Refuse - not including C&amp;D that was used to build berm</b>					1,560	7,799	
						<b>2021 Tonnes</b>	1,560
						<b>Islands 2021 Census Population</b>	4,582
						<b>2021 tonnes/per capita/year</b>	0.34
<b>Total for NCRD</b>							
						<b>2021 Tonnes</b>	12,894
						<b>2021 Census Population</b>	18,181
						<b>2021 tonnes/per capita/year</b>	0.71

As seen above the disposal rate in the Islands service area is substantially lower than in the Mainland service area. It should be noted that these numbers depend on many factors that are interpreted differently from time to time and by different people. The data is dependent on good, well organized and consistent record keeping from year to year.



East, CGMAR, USGS, State of Alaska, Esri, GEBCO, Esri, HERE, Garmin, IGC, NOAA, USGS, EPA, NPS, MRCAN, Parks Canada, C:\Users\Cheremington\Desktop\GIST\7128\Lesson4\NCRD

 <p><b>SPERLING HANSEN ASSOCIATES</b></p> <p>Landfill Services Group</p> <ul style="list-style-type: none"> <li>• Landfill Siting</li> <li>• Design &amp; Operational Plans</li> <li>• Landfill Closure</li> <li>• Environmental Monitoring</li> </ul> <p>1225 Keith Road North Vancouver, B.C. V7J 1J3</p> <p>Phone: (604) 986-7723 Fax: (604) 986-7734</p>	<p>CLIENT:</p>  <p><b>NORTH COAST</b> REGIONAL DISTRICT</p>	<p>PROJECT:</p> <p><b>North Coast Regional District SWMP Update</b></p>	<p>TITLE:</p> <p><b>North Coast Regional District Solid Waste Management Areas &amp; Facilities</b></p>
	<p>LEGEND:</p> <ul style="list-style-type: none"> <li>● First Nations Communities</li> <li>● Landfill</li> <li>● Recycle Bin</li> <li>● Recycle Depot</li> <li>● Transfer Station</li> <li>● Islands Waste Management Area</li> <li>● Mainland Waste Management Area</li> </ul>	<p>SCALE: 1:1,700,000</p> <p>DESIGNED: NA</p> <p>DRAWN: NEL</p> <p>CHECKED: NK</p>	<p>DATE: 2022/02/16</p> <p>PROJECT NO: PRJ 21104</p> <p>PROJECTION: NAD 1983 UTM Zone 9N</p> <p>DRAWING NO: <b>FIGURE 1</b></p>

**Figure 1 - NCRD Solid Waste Disposal System Overview**

### 3 RESIDUALS MANAGEMENT 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 TM2, 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 in Prince Rupert 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 six transfer stations within the two service areas as summarized below:

- Mainland service area: Dolphin Island Transfer Station (Gitxaala Nation), Lax Kw'alaams Band Transfer Station, and Metlakatla Transfer Station
- Islands service area: Masset Transfer Station, Skidegate Transfer Station, Sandspit Transfer Station.

The NCRD provides curbside collection of refuse in the Islands service area, First Nations provide collection in their jurisdictions and Prince Rupert and Port Edwards provide curbside collection within their municipal boundaries.

Self haul and subscription services are also available in both services areas to a transfer or disposal facility on a user pay basis.

These facilities and programs are shown in Figures 1, 1a and 1b and are described in further detail below.





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Kilometers



**SPERLING  
HANSEN  
ASSOCIATES**



Landfill Services Group  
 • Landfill Siting  
 • Design & Operational Plans  
 • Landfill Closure  
 • Environmental Monitoring  
 #5 - 1225 Keith Road  
 North Vancouver, B.C. V7J 1J5  
 Phone: (604) 986-7723  
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Earthstar Geographics

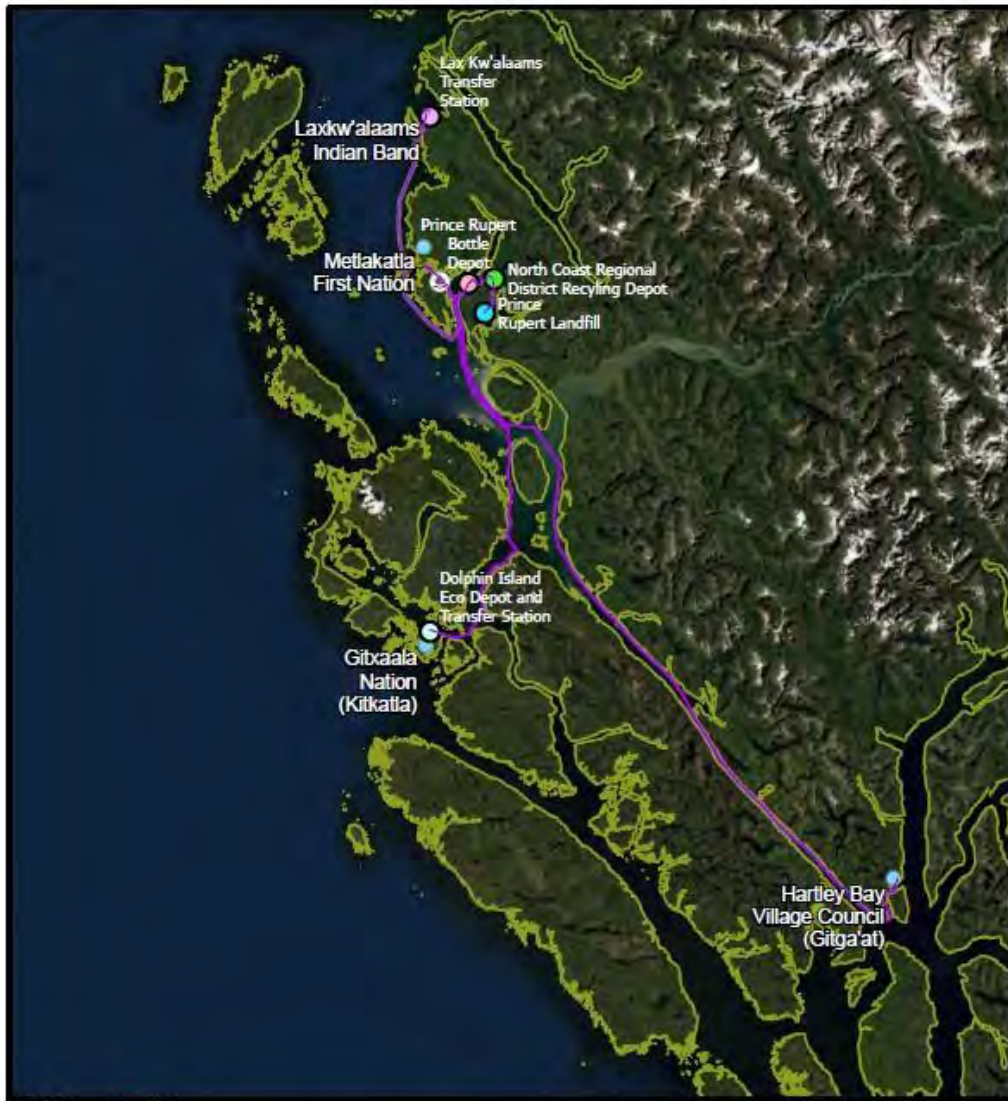
CLIENT:  
  
**NORTH COAST**  
REGIONAL DISTRICT

PROJECT:  
**North Coast  
 Regional District  
 SWMP Update**

TITLE:  
**North Coast Regional District  
 Solid Waste Management Areas  
 & Facilities**

LEGEND:  
 Ferry Terminal  
 Coastlines

SCALE: 1:1,014,558	DATE: 2022/04/07 <small>yyyy/mm/dd</small>	PROJECT NO: PRJ 21104
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Kilometers

 **SPERLING  
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- Landfill Siting
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CLIENT:

 **NORTH COAST  
REGIONAL DISTRICT**



PROJECT:

**North Coast  
Regional District  
SWMP Update**

TITLE:

**North Coast Regional District  
Solid Waste Management Areas  
& Facilities**

LEGEND:

-  Ferry Terminal
-  Coastlines

SCALE:	DATE:	PROJECT NO.:
1:1,585,247	2022/04/07 <small>yyyy/mm/dd</small>	PRJ 21104
DESIGNED:	CH	PROJECTION:
		WGS 1984 Web Mercator
DRAWN:	CH	DRAWING NO.:
		<b>FIGURE 1b</b>
CHECKED:	NK	

Earthstar Geographics

### 3.1 Mainland and Islands Curbside Waste Collection

The majority of NCRD communities are provided with residential curbside collection services for refuse. Optional curbside collection is extended to commercial and industrial premises in some areas.

#### Mainland Curbside Collection

**The Village of Port Edward** has a weekly manual collection service, for refuse only, which is delivered to the PRL. The service is operated in-house and is regulated under Bylaw No. 666. The service allows for two 100L containers each week for residential dwellings, and 4 containers per week for commercial premises. The bylaw includes provisions for service to commercial and multi-home residential buildings with a container provided by the municipality; and for industrial premises to join the service under a contract.

**The City of Prince Rupert** has an automated weekly service for curbside collection of refuse and recycling. The service is operated in-house and is regulated under Bylaw No. 3480, which came into force on January 1, 2022 with the onboarding of the new recycling collection program. Recycling materials are transported to the NCRD recycling facility for processing and marketing. Refuse is collected in a 120L bin and residents have the option to request a larger 240L bin for a small change out fee. The bylaw includes provisions for commercial collection of two containers twice per week.

**Electoral Area A and C** do not receive curbside collection service. Approximately 34% of the dwellings in these electoral areas are occupied fulltime and some are located on islands. Self haul to the PRL is the main method of refuse management for residents and small businesses outside of Prince Rupert and Port Edward.

Industrial, commercial and institutional (ICI) waste is collected by private haulers under a subscription service or self hauled.

First Nations, including Lax Kw'alaams, Metlakatla, Gitxaala and Gitga'at collect refuse from their communities and transfer it to the PRL by barge or truck.

#### Islands Curbside Collection

Residential refuse in Electoral Area D and E is collected from all NCRD residential dwellings accessible by road under a manual collection contract with Big Red Enterprises. This contract includes service to the Village of Masset, Village of Port Clements and Village of Queen Charlotte. The contract specifically requires the following routes be serviced:

- (1) Moresby Island
- (2) Queen Charlotte City and Skidegate Landing

- (3) Chinukundl Creek to Tiell, Port Clements to Nadu Road
- (4) Village of Masset and Graham Island North/Towhill Road/South of Masset to Pure Lake.

Bagged refuse is collected in Regulation Garbage Receptacles provided by the occupant of a maximum capacity of 71L and weighing no more than 30kg. A maximum of two containers may be collected each week (additional garbage requires a Bag Tag available through Big Red Enterprises).

**Old Masset Village Council** provides weekly curbside collection service to their residents, and hauls to the Port Clements Landfill.

**Skidegate Band Council** provides weekly curbside collection service to their residents, and hauls to the Skidegate Transfer Station.

### 3.2 Collection and Facility Use Agreements

The following table provides information on the agreements between the NCRD and other jurisdictions using NCRD services.

**Table 3 – 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  Collection of user fees by the Old Massett Village Council on behalf of the NCRD
Skidegate Band Council	Islands	Use of Skidegate Transfer Station and the Islands Landfill for residential MSW drop-off and disposal and septage disposal
Big Red Enterprises  NCRD Refuse Collection Service	Islands	Collection of MSW from residential dwellings, apartments and customers in the Islands Waste Management Area including:  Moresby Island  Queen Charlotte City and Skidegate Landing  Chinukundl Creek to Tiell  Port Clements to Nadu Road

Entity	Service Area	Services
		Village of Masset and Graham Island North/Towhill Road, South of Masset to Pure Lake
Village of Masset	Islands	Solid Waste Services including waste collection and recycling services 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 Collection of user fees by the Village of Port Clements on behalf of the NCRD
Village of Queen Charlotte	Islands	Solid Waste Services including waste collection and recycling services Collection of user fees by the Village of Queen Charlotte on behalf of the NCRD

### 3.3 Disposal Facilities

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

#### 3.3.1 Mainland and Islands Transfer Stations

A description of the Mainland and Islands transfer stations are provided below.

##### 3.3.1.1 Mainland Transfer Stations

The NCRD does not own or operate any waste transfers stations on the Mainland, however there are two formal facilities owned and operated by First Nations as described below.

#### Dolphin Island Ecodepot and Transfer Station

This facility in Kitkatla is operated by the Gitxaala Nation. Refuse collection in the area was reduced from twice per week to once per week and is collected by Gitxaala Nation. Waste is picked up from the transfer station every three months by Wainwright Marine and is then offloaded at the Wainwright Marine yard by Rupert Disposal. Delivery is to the

PL by Rupert Disposal. Gitxaala Nation estimates a generation rate of approximately 5 tonnes/ 3months.

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 at the site and then sent to the mainland. 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.

The current facility includes three bays with approximately 26 roll-off bins, a recycling shed, and a septic lagoon. Areas exist for scrap metal, whitegoods, tires, and auto hulks.

### **Lax Kw'alaam Transfer Station**

SHA was unable to find information regarding this facility at the time of writing this TM but hopes to obtain details prior to development of the Draft SWMP.

### **Metlakatla Transfer Station**

SHA was unable to find information regarding this facility at the time of writing this TM but hopes to obtain details prior to development of the Draft SWMP.

#### **3.3.1.2 Islands Transfer Stations**

The following brief descriptions are provided for the waste transfer stations on Haida Gwaii owned and operated by the NCRD. Licenses of Occupation and Operational Certificates are attached in Appendix B.

### **Masset Transfer Station**

The Masset Transfer Station is located approximately 2 km east of Masset along Tow Hill Road in the Industrial Park. The site accepts residential materials and C&D waste and is equipped with a stump dump for all yard waste, bins for metal, and bins for MSW. Tires and white goods are accepted and separated during landfill deposition. A bin exists for C&D or dimensional lumber. Due to airport proximity, burning is not conducted at the Transfer Station.

### **Skidegate Transfer Station**

The Skidegate Transfer Station is located approximately 10 km north of Skidegate (Miller Creek) on Highway 16 and accepts residential and C&D waste. The Transfer Station is equipped with two septage lagoons, and areas for tire storage, metal storage, and CFC containing appliances. Bins exist for MSW and C&D waste. The Transfer Station also serves the Skidegate Band who collect their own waste and drop it off. The facility is permitted to burn clean wood and has a burn pit designated for burning. A shipping container is located on site and stores waste oil recyclables. Septage lagoon

management includes rotating usage of the pits so that one remains active while the other dries out. Lagoon clean out occurs on a regular basis with the sludge being first dried on site and then delivered to the Islands Landfill where it is mixed with soil and used for landfill cover.

### **Sandspit Transfer Station**

The Sandspit Transfer Station is located approximately 10 km down Copper Bay Mainline in Sandspit, BC. The Station is equipped with a two bin lock block ramp (note that only one bin is placed at a time due to volume and wildlife considerations). Designated storage areas exist for tires, scrap metal, auto hulks, CFC materials, propane tanks. There is a burn area and a septic lagoon at the facility that are operated as per permit requirements.

### **3.3.2 Mainland and Islands Landfills**

Two landfill sites are in operation in the region including the NCRD owned Islands Landfill (IL) and the City of Prince Rupert owned Prince Rupert Landfill (PRL) as described below.

#### **Islands Landfill**

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 operated under Operational Certificate MR-7150. The IL is situated on Lot 401 of the Queen Charlotte District of Crown Subdivision Plan 24TR1-Queen\_Charlotte PIN 2045921. Local and regional topography slopes to the southwest to Kumdis Slough. The site slopes gently in this southwest direction at a grade of approximately 5.6 %.

Bedrock geology under the site is documented as Upper Oligocene to Lower Pliocene aged sedimentary rock consisting of sandstone, conglomerate, siltstone, mudstone, shale, coal covered largely by Pleistocene glacial sediments. The nearest groundwater wells are located approximately 4 km to the south and 8 km to the north. Well logs indicate private domestic well use with stratigraphy ranging from sands, silts and clays to gravels ranging 22 mbgs to 40 mbgs. The site sits on an unmapped aquifer.

A surface water tributary exists approximately 125 m south of the site with drainage to the west marine area of the Kumdis Slough.

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 (20 years as of 2021). This facility also includes the Islands Waste Management recycling facility staffed by two NCRD employees. Refuse and recyclable materials are received at this facility from the other NCRD depots and transfer stations on the Island.

The Masset, Skidegate and Sandspit Transfer Stations, First Nations communities and residents and businesses deliver MSW to the Islands Landfill under facility use

agreements, hauling contracts or self-haul where fees are collected and recorded by volume of load. Fees are charged for each load in accordance with the NCRD Bylaws.

The facility is open Monday to Friday (8:30 am – 3:30 pm) and Saturdays (8:00 am – 3:00 pm) and closed Sundays and Statutory Holidays.

### **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. PRL is located on Kaien Island with the entrance at 500 Ridley Island Road 2 km off Hwy 16 and 12 km south of the Prince Rupert community on a small peninsula on the northern side of Wainwright Basin. The landfilling operations occupy two parcels described as District Lot 2220, Range 5, Coast District and District Lot 8034, Range 5, Coast District. The landfill property occupies 16.1 ha of rolling land with low relief and forested terrain.

The bedrock underlying the site is documented as Jurassic to Cretaceous aged metamorphic rock with lower amphibolite/kyanite grade metamorphic rocks. Surficial geology is composed of a veneer of colluvial and mass wasting deposits and includes muskeg. Local topography slopes to the south marine water, Wainwright Basin, located approximately 100 m downgradient of the site. The site slopes from 32 m in elevation at the gate down to sea level at the coastline. This proximity to the coastline puts the site within a tsunami flood risk area (Zone A, North Coast and Haida Gwaii).

There are no residences within 500 m of the Landfill and the closest proximity industry/businesses are resource extraction. Surface water receptors on the landfill property include Upper and Lower West Creek to the west and Upper and Lower East Creek to the east of the footprint both paralleling the current footprint of the landfill site.

The nearest climate station, Prince Rupert Airport Station, is located approximately 10.56 km from the site. Based on climate normals from 1981 to 2010, the average annual precipitation is approximately 2,619 mm with approximately 2,530 mm of rainfall and 92.4 cm of snowfall. The annual daily average temperature is 7.5°C. Maximum daily average temperatures are seen in August at 13.8°C whereas minimum daily average temperatures are seen in January at 2.4°C. The maximum average snowfall of 25.6 cm occurs in January.

The PRL, is open six days per week and receives waste from the City of Prince Rupert, District of Port Edwards, and First Nations, serving a population of approximately 13,500. The most recent Design, Operating and Closure Plan developed by SHA estimated a lifespan of 54 years (2076) on the current footprint. 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 of Prince Rupert 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. Prohibited waste for PRL is clearly identified on the landfill brochure with alternative local recycling options provided. Prohibited waste includes items that are deemed recyclable and include batteries (vehicle & household), fluorescent compact bulb and tube lights, solvents, household and marine paint, pesticides, gasoline and containers, home electronics, small home appliances, white goods, tires, used outdoor power equipment, used oil, filters and containers, used antifreeze and containers, propane cylinders, creosote treated wood and railway ties.

Leachate is conveyed to primary and secondary lagoons where treatment occurs prior to discharge into Wainwright Basin. Treatment occurs in the secondary pond which contains aerated lava rock trickle filters, biomedica mats, an anoxic chamber, and discharge piping to Wainwright Basin. A new septage disposal facility is being constructed that will be tied to the leachate treatment system on site. Extensive environmental monitoring is conducted prior to discharge to ensure Operational Certificate limits are being met. On-site groundwater monitoring wells are monitored to confirm compliance as well.

The following table lists the materials that require special treatment and handling at the two NCRD landfills.

**Table 4 - Controlled Waste Types Accepted at Landfills within the NCRD**

Controlled Wastes at Landfills within the NCRD	
NCRD Islands Landfill	City of Prince Rupert Landfill
<ul style="list-style-type: none"> <li>• Condemned foods</li> <li>• Screenings and sludge from municipal sewage treatment plants, pump stations and septic systems</li> <li>• Waste asbestos</li> <li>• Food processing waste</li> <li>• Dead animals</li> <li>• Bulky waste</li> <li>• Large tires</li> <li>• Contaminated soils*</li> </ul>	<ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Liquid Wastes and sludges including sewage</li> <li>• Dead animals and animal parts (including bones, feathers, skin, hair, nails and teeth)</li> <li>• Contaminated soils acceptable to the Director of Operations*</li> <li>• Non-contaminated water waste acceptable to the Director of Operations</li> <li>• Soot</li> <li>• Mobile Homes</li> <li>• Automobile bodies, automobile parts, or boat hulls</li> <li>• Tanks, barrels, drums, pails and other large liquid containers, that re empty</li> <li>• Gypsum</li> <li>• Lumber, timber, logs etc., longer than 3.6 metres</li> <li>• Cruise ship international garbage (low and high risk)</li> </ul>

## Controlled Wastes at Landfills within the NCRD

- Grain
- Sandblast sand
- Non-processed fish waste (salmon, crab, sea urchins etc.

\*\*The Prince Rupert Landfill and Islands Landfill Operational Certificates authorize the disposal of contaminated soil with concentrations of contaminants that are less than hazardous waste as per the Hazardous Waste Regulation.

### 3.4 Bylaws

The NCRD has adopted bylaws for the management of solid waste, including service establishment bylaws, reserve establishment bylaws, and rates and regulation bylaws. A summary of these bylaws is included in the following table.

**Table 5 - Solid Waste Related Bylaws within the NCRD and Incorporated Areas**

Administration	Bylaw No.	Amending Bylaws	Bylaw Name	Service Area	Adoption Year
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 District Regional Recycling Reserve Fund Establishment Bylaw	NCRD	2013

Administration	Bylaw No.	Amending Bylaws	Bylaw Name	Service Area	Adoption Year
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
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	NCRD	2019

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

## 4 RESIDUALS MANAGEMENT STRATEGY OPTIONS AND INITIATIVES

This section outlines the strategy options and initiatives for residuals management in the NCRD. With respect to waste disposal, the Province requires the following objectives and principles be met and considered:

- Manage residuals appropriately and in an environmentally responsible manner, including using best practices, available technology and infrastructure investment to recover any remaining materials and energy from the waste stream and protect the environment.
- Strengthen partnerships with interested parties to achieve regional targets such as with waste sector service providers, associations, neighboring jurisdictions and waste generators.

At this time the NCRD has sufficient disposal capacity to manage the residuals generated in both sub-regions. As discussed in TM1, waste diversion strategies, once implemented, will add to the lifespan of the existing disposal capacity.

According to NCRD staff, **waste to energy technology** has been reviewed for the region on two occasions. It is understood that these studies found that the quantity of waste available in the Islands sub-region and in the Mainland sub-region was not sufficient to make small scale waste to energy technology efficient. As technology changes and small scale incineration or other types of waste to energy technology becomes viable, this option should be again reviewed.

### 4.1 Disposal Initiatives in Other Jurisdictions

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

#### **RDKS 2021 Solid Waste Management Plan**

The Regional District of Kitimat Stikine has listed the following residuals management strategies for implementation in their recent SWMP update:

1. To improve residuals management at existing facilities:
  - a. Set limits on solid waste volumes accepted from outside service areas
  - b. Reduce greenhouse gas emissions
  - c. Effectively use landfill airspace

- d. Improve public accessibility to existing facilities
  - e. Deliver operational service in-house
  - f. Close selected small landfills and replace with transfer stations or other suitable waste management services (not applicable to NCRD)
  - g. Engage and communicate with citizens on waste management
  - h. Set limits and reporting requirements for liquid waste
  - i. Assist in the prevention of illegal dumping.
2. Strategies to expand the current service areas and for establishing new solid waste facilities in the new areas:
- a. Develop an agreement between the RDKS and the District of Kitimat, including provisions for use of the landfill at Forceman Ridge WMF
  - b. Include Dease Lake in the RDKS Service Area
  - c. Increase RDKS service area to include Telegraph Creek waste management.

### **CCRD 2017 Solid Waste Management Plan**

The Central Coast Regional District lists in their 2017 SWMP the following residuals management goals:

- 1. Strive to meet the requirements of the new Landfill Criteria for Municipal Solid Waste where applicable, practical and financially viable (includes development of a Design, Operations and Closure Plan for the Thorson Creek Waste and Recycling Centre (formerly the Bella Coola Landfill).

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

- 1. Centralize facilities to reduce costs of operating several facilities within reasonable driving distances.
- 2. Consider reduced operating hours that can reasonably still service self-haulers on a weekly basis.

## 4.2 NCRD Residuals Management Strategies

The opportunities listed in this section are derived from the items discussed at the earlier PTAC meetings, items discussed with NCRD staff and those items carried forward from the original SWMP as listed in Appendix A

### 4.2.1 Administrative

The following strategies were listed in TM1 as they apply to both the waste diversion and residuals management systems in the region.

**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.

**A-4: Develop cost recovery models.** This initiative is the primary topic of Technical Memo 3 and will be covered in detail.

**A-5: 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 (I10.3.2). Reestablishment of the Islands Solid Waste Advisory Committee will assist with the management of the Islands Solid Waste service.

**A-6: 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 and environmental protection, but must be done cautiously to ensure there are

environmentally sound, viable, sustainable and economical options available before they are banned.

**A-7: 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.

## 4.2.2 Residuals Management

### RM-1: Maintenance of Transfer Stations

This item is also from the original SWMP (I4.1.4) and recommends that maintenance of the transfer stations be included in the garbage collection contract. This initiative may ensure that the three Island transfer stations are regularly maintained or at least a report is provided to the NCRD on the condition of the site on a monthly basis so that any repairs and issues can be resolved on a pro-active basis. The cost of such would be minor unless there are labour and machinery costs for the work.

### RM-2: Islands Collection Costs Review

From the original SWMP item I5.2.1 recommends that the estimated annual cost of the Islands garbage collection contract will be apportioned amongst the total number of collection units and applied to their quarterly bills. The costs apportioned currently reflect the Big Red Enterprises contract costs. Review of all costs for the garbage collection program could be reviewed in order to confirm all administrative and operational costs are included.

### RM-3: Problem Waste Stockpiled at Facilities

According to NCRD staff, some recyclable materials can tend to accumulate to a large enough extent at some of the facilities that the stockpiles become problematic. Item I9.1.1 in the original SWMP identified this issue and it appears that it is still an ongoing problem. The initiative allows for funds to be withdrawn from a reserve to pay for the handling and shipping of these materials when they become problematic, and if stewards or contractors that normally would look after the material are not being responsive to the needs of the Island facilities in a reasonable manner. The most challenging feature of this item is the cost sharing with those recyclers that may not think it is worth their while or they consider the costs prohibitive. The cost to crush and truck auto bodies from Haida Gwaii to Prince George may be more than the metal recycler's revenue. This can change periodically so it is recommended that the NCRD regularly inquire as to the changes in costs and prices in order to respond quickly to an opportunity to reduce stockpile sizes.



#### **RM-4: Illegal Dumping Management**

As in the original SWMP (I10.2.2), and still pertinent to today, the NCRD will review incidents of illegal dumping and recommend the implementation of one or all of the following strategies:

1. Publish photos of incidents
2. Identify the owners of the illegally dumped refuse and bill them for the proper disposal
3. The adoption of an illegal dumping bylaw with a schedule of fines for various infractions.

Many, if not all, jurisdictions that manage solid waste have had to deal with illegal dumping. The attitude of illegal dumpers is something that no one can manage and that is the usual reason for people to dump waste in the environment; they don't care enough about the environment or doing the right thing.

An undertaking in many jurisdictions includes networking with the agencies and groups that could at least report the dumping to the NCRD if not help clean it up. The Regional District of North Okanagan organized a 'Meeting of the Minds' inviting organizations such as the Ministries of Environment, Forests, Lands and Highways, ATV and hiking clubs, and the RCMP. Member municipalities were included as they are responsible for their internal roadsides whereas in Electoral Areas the Province is responsible for roadside litter. Cooperative efforts were agreed on such as the following:

- a) Report all illegal dumping to the Solid Waste Manager
- b) Use social media to request witnesses where possible
- c) GPS each dump site to monitor trends/patterns
- d) Erect signs at each common dump site stating that the areas are under surveillance and illegal dumping is strictly enforced
- e) Assist community groups/clubs with cleanup by allowing free tipping with prior written approval
- f) Attempt to find evidence of who dumped the garbage when possible so that letters could be written to the illegal dumper with the threat of fines
- g) Work with local Conservation Officers to issue fines where possible.

The budget set aside for this program in the RDNO was \$10,000/year, but only a fraction of the budget was ever used for an area of 7,500 km<sup>2</sup>.

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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  $\diamond$  use  $\diamond$  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:** The 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:** The 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

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**APPENDIX A**  
**1996 Solid Waste Management Plan Initiatives Status**

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

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

<b>Initiative</b>	<b>Topic</b>	<b>Description</b>	<b>NCRD Comments</b>
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.

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

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 recycling 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.

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

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.	

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

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.

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

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. <a href="http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping">http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping</a> 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 quarterly 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): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 3) Senior Government grants.	Yes. Bylaw provided.
11.1.1	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.
11.1.2	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.

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

11.1.3	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.
11.1.4	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.
11.2.1	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.
12.1.2	Landfill Operation	Operate the landfill site according to the Landfill Plan.	Yes.
12.1.3	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.
12.1.4	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.
12.1.5	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.
12.1.6	Review	Review the data from the Environmental Monitoring program and determine whether amendments are required to Appendix I-2	Yes. Periodically.
12.2.1	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.
12.2.2	Transfer of Sites and Permits	Prior to the final closure plans have been prepared Skidegate and Sandspit Landfills, the Regional District will 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.
12.2.3	Transfer Site Permits	Negotiate with the Ministry of Environment for an amendment of the transfer site permits for the following uses: 1) Transfer sites for temporary storage of municipal waste 2) Septage disposal (Sandspit only) 3) Burning sites for some categories of demolition waste 4) Other demolition wastes that could be used on site as fill or cover material. 5) Temporary storage areas for auto hulks, tires and white goods	Yes.
12.3.1	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.



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

12.3.2	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.
12.3.3	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.
12.3.4	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.
13.1.1	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.
13.1.2	Other Users	Invite BC Parks and the Ministry of Highways participate in the regular collection service for their roadside refuse containers.	
13.1.3	Weekly Service	All collection units enumerated will be provided with a weekly refuse collection service.	Yes. All units accessible by road.
13.1.4	Service Areas	Local refuse collection systems be established for the following service areas (Fig 8): 1) Moresby Island 2) Queen Charlotte City/Skidegate including all areas south of Chinukundl Creek 3) Port Clements/Tlell including all areas south of including Nadu Road to north of Chinukundl Creek 4) Masset/Old Massett including areas north of Nadu Road and Tow Hill Road.	Yes.
13.1.5	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: 1) They provide an alternative compulsory collection service to all their residents; 2) They have the same level of fee surcharges for additional volumes of garbage as stated in the plan; and 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.
13.1.6	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
13.1.7	Collection Contract	Tender each local service area for weekly refuse service.	Yes - agreement provided.
13.1.8	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.
13.1.9	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.

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

13.1.10	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.
13.1.11	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 divided to determine a quarterly collection billing fee.	Not currently used as practice for determining rates. Collection rates were increased based on inflationary cost adjustments in 2020. Prior to that, I'm not aware of any rate changes for this fee.
13.1.12	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.
13.1.13	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.
13.1.14	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.
13.2.2	Optional Commercial Collection	Successful bidders for local collection contracts be given the option of having the Regional District collect fees for additional services that: 1) revenue equivalent to the volume (less the regular contract) at the transfer station or landfill will be added to the contract payment; and 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.
14.1.1	Transfer Station Sites	Provide facilities open to the general public during hours in Appendix 4 at the following locations (figure 8): 1) Mas set Transfer Station 2) Port Clements Regional Landfill 3) Skidegate Transfer Station 4) Sandspit Transfer Station	Hours for facilities are as follows: <a href="https://www.ncrdbc.com/services/waste/landfill-transfer-stations">https://www.ncrdbc.com/services/waste/landfill-transfer-stations</a>
14.1.2	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.
14.1.3	Standard Size	The transfer stations shall be designed to accommodate 50 yd <sup>3</sup> roll-off bins.	The NCRD owns the roll off bins.
14.1.4	Maintenance	Maintenance of the transfer stations (as specified in Appendix 1-5) is to be part of the contract awarded for local collection.	

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

14.1.5	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.
14.1.6	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.
14.1.7	Sandspit Septage Disposal	The Septage disposal area will continue to be permitted at the Sandspit Transfer Station.	Yes.
14.1.8	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.	
14.1.9	Collection of Fees	The miniaturous contractor shall collect fees from the public as specified in Appendix I-3.	Yes.
14.2.1	Use of Fees	Fees collected shall be applied in accordance with Appendix I-3	
14.2.2	Capital Cost	The initial capital costs of the transfer stations be funded by: 1) Provincial Rural Waste Management Grants; 2) Taxation; and 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.
14.2.3	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.
14.2.4	Operating Costs	Operating costs for the Transfer station will be paid from: 1) user charges according to Policy 1-4.2.2; and 2) monthly charges applied to all collection units as in Policy 1-3.1.6.	Yes. Current cost recovery may not be adequate.
14.2.5	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.
15.1.1	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.
15.1.2	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.	
15.1.3	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.
15.2.1	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.	
15.2.2	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.

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

16.1.1	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.
16.1.2	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.
16.1.3	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.
16.1.4	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.
16.1.5	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.
16.1.6	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.
16.1.7	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.
16.2.1	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.
17.1.1	Education	The Island Coordinator will organize regular solid waste and recycling waste reduction education programs for schools, local government and other interested groups.	No.
17.1.2	Funding	Apply to BC Environment for funds to assist in support in providing waste reduction education.	No.
18.1	Backyard Composters	Backyard composting will be encouraged and subsidized from time to time with funds provided by the Provincial Government and from the Recycling Reserve.	No.
18.2	Other Composting	ISWAC will encourage initiatives for commercial and backyard composting operations by providing information on composter design and operation.	No.
19.1.1	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.
19.1.2	Problem Waste Coordinator	The Islands Coordinator will facilitate the proper disposal of problem wastes by : a) being conversant with regulations governing the storage and haulage of special waste; and 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.

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

19.1.3	General Recycling Support	ISWAC 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.
19.1.4	Recycling Capital Expenditures	ISWAC 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 purchase the needed equipment. <a href="https://www.ncrdbc.com/about-us/news-notice/village-masset-recycling-depot-opening-august-13-2021">https://www.ncrdbc.com/about-us/news-notice/village-masset-recycling-depot-opening-august-13-2021</a>
19.1.5	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.
19.1.6	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 coordinating recycling activities.
19.1.7	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.
110.1.1	Schedules	Implement the plan according to the schedules presented in Fig 9	Yes - for the most part.
110.1.2	Responsibility	Responsibility for implementing various components of the plan will be according to Figure 10	Yes.
110.2.1	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.
110.2.2	Strategies to Prevent Illegal Dumping	ISWAC will review incidents of illegal dumping and recommend the implementation of one or all of the following strategies: 1) publish photos of incidents; 2) identify the owners of the illegally dumped refuse and bill them for the proper disposal; and 3) the adoption of an illegal dumping bylaw with a schedule of fines for various infractions.	Not currently taking place. ISWAC not meeting.
110.2.4	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.
110.3.1	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.
110.3.2	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.

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

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: 1 )ISW AC, 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 in ISW service have not arisen during my tenure.
I10.5.1	Funding Sources	Required funds are to be raised from (figure 11): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 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.

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**APPENDIX B**  
**Islands Transfer Stations Agreements**

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March 4, 2020

Reference Number: 385303  
Authorization Number: 16840

**REGISTERED MAIL**

NORTH COAST REGIONAL DISTRICT  
14-342 3<sup>rd</sup> AVE W  
Prince Rupert, BC V8J 1L5

Dear Operational Certificate Holder:

Enclosed is Amended Operational Certificate 16840 issued under the provisions of the *Environmental Management Act*. Your attention is respectfully directed to the terms and conditions outlined in the operational certificate. An annual fee will be determined according to the Permit Fees Regulation.

This operational certificate does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the operational certificate holder. It is also the responsibility of the operational certificate holder to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Administration of this operational certificate will be carried out by staff from the Authorizations - South Region. Plans, data and reports pertinent to the operational certificate are to be submitted to the Regional Manager, Environmental Protection, at Ministry of Environment and Climate Change Strategy, Regional Operations, Authorizations - South Region, 1259 Dalhousie Dr., Kamloops BC V2C 5Z5.

Yours truly,

Luc Lachance, P.Eng  
for Director, *Environmental Management Act*  
Authorizations - South Region

Ministry of Environment and  
Climate Change Strategy      Environmental Protection  
Division

Authorizations - South Region  
[Authorization.South@gov.bc.ca](mailto:Authorization.South@gov.bc.ca)

RECEIVED MAR - 9 2020



**MINISTRY OF ENVIRONMENT  
AND CLIMATE CHANGE  
STRATEGY**

**OPERATIONAL CERTIFICATE**

16840

*Under the Provisions of the Environmental Management Act*

**NORTH COAST REGIONAL DISTRICT**

**14-342 3<sup>rd</sup> Avenue West/ Prince Rupert B.C. V8J-1L5**

is authorized to discharge septage to the ground, and emissions to the air from open burning dry, clean wood at the Skidegate Transfer Station facility located near Skidegate, British Columbia, subject to the terms and conditions listed below. Contravention of any of these conditions is a violation of the *Environmental Management Act* and may lead to prosecution.


1. **AUTHORIZED DISCHARGES**

1.1 **Open Burning**

This section applies to the discharge of ash and air contaminants from the open burning of Dry Clean Wood.

- 1.1.1 The maximum authorized rate of Dry Clean Wood is 9m<sup>3</sup>/day, up to a maximum of 80m<sup>3</sup>/year.
- 1.1.2 The characteristics of the emissions shall be typical of those originating from the controlled open burning of clean wood wastes.
- 1.1.3 The location of the property where burning is authorized to occur is a burn pit dug out of a gravel pit approximately 50 metres from the septage lagoon area, on the site bounded by a line commencing at a point 1740 metres east and 211 metres north of the S.W. corner of Lot 467, P.L. 109, Queen Charlotte District; thence 201 metres east, thence 201 metres north, thence 201 metres west, thence 201 metres south to

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the point of commencement. Any open burning of Dry Clean Wood wastes shall be restricted to the designated open burning area as shown on Site Plan A.

## 1.2 Septage Management

This section applies to the discharge of septage into two treatment lagoons. The site reference number for this discharge is E220079.

- 1.2.1 The maximum rate of discharge is 150m<sup>3</sup>/ year.
- 1.2.2 The characteristic of the septage shall be typical of septic tank and holding tank sludges.
- 1.2.3 The authorized works are the exfiltration lagoons and related appurtenances approximately located as shown on Site Plan A.

## 1.3 Facility Entrance

This section applies to the Facility Entrance.

- 1.3.1 The authorized works are sign(s), gate, fence, weigh scale, attendant hut, waste and recyclable material drop-off and storage facilities, and related appurtenances approximately located as shown on Site Plan A.

## 2. GENERAL REQUIREMENTS


### 2.1 Glossary

Capitalized terms referred to in this authorization are defined in the Glossary below. Other terms used in this authorization have the same meaning as those defined in the *Environmental Management Act*, applicable regulations, and the Landfill Criteria.

#### **“Dry Clean Wood”**

means clean demolition debris consisting of lumber that has not been treated with wood preservatives or other chemicals and is not coated with paint, varnish, oil or other finishing material. Dry and clean wood may include hydrocarbon accelerants but excludes all other types of materials. For clarity, the materials listed in paragraphs (a) to (x) of the definition of "burning or incineration of prohibited material" in section 2 of Schedule 1 of the Waste

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Discharge Regulation are not included, nor can be used as accelerant material, in the open burning;

**“Freeboard”**

means the difference in elevation between the contained liquid level and the top of the containment works at its lowest point;

**“Landfill Criteria”**

means the Landfill Criteria for Municipal Solid Waste Second Edition June 2016, as amended or replaced from time to time;

**“Septage”**

means the liquid, solid, and semisolid material that results from wastewater pre-treatment in a septic tank;

**“Septage Treatment Lagoon”**

Means the pond area where raw septage is discharged to, and where the liquid component infiltrates to ground.

**2.2 Emergency Procedures**

In the event of an emergency, or condition beyond the control of the operational certificate holder which prevents continuing operation of the approved waste discharges, the operational certificate holder shall report the details of the non-compliance to the Report All Poachers and Polluters (RAPP) 1-877-952-7277.

The director may require additional controls on the waste discharges at any time based on the impacts to the receiving environment.


**3. GENERAL REQUIREMENTS**

**3.1 Septage Treatment Lagoon Management Plan (STLMP)**

3.1.1 The operational certificate holder must cause a qualified professional to certify and submit an up to date STLMP for the septage lagoons to the director, on or before July 1, 2020. The plan must be kept up to date and must include, but not be limited to, the following:

- a. The design of the lagoon treatment system including capacity, size/volume, construction details and rate of effluent treatment.

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- b. Operational aspects of the lagoons including: effluent treatment and management, surface water management, vegetation management, and any other lagoon management and maintenance required.
- c. Description of the receiving environment receptors and pathways that may be impacted by the septage lagoons operation. This STLMP must include a monitoring program for surface water and/or groundwater characteristics immediately upgradient and downgradient of the lagoon area, including applicable discharge quality standards for parameters of concerns.
- d. Description of contingency measures and actions planned in the event of accidental discharge or discharge quality standards exceedance.

The operational certificate holder must carry out the STLMP and design, construct, operate, inspect, maintain, monitor, and close the septage treatment lagoon, in compliance with the most recent STLMP and this operational certificate.

#### 4. **OPERATION AND PERFORMANCE REQUIREMENTS**

##### 4.1 **Operational Requirements for Burning**

###### 4.1.1 **Quantity Timing and Duration of Discharge**

The maximum authorized quantity of Clean Dry Wood to be open burned during each event is that which has accumulated at the time of burn initiation. The pile shall be constructed so as to ensure a rapid and complete burn. Every reasonable alternative for reducing, reusing, or recycling wood residue has been pursued to minimize the amount of material to be combusted.


The maximum authorized duration of each burn shall be limited to the period between two hours after sunrise on the day of ignition, and sunset on the following day. Each open burn must be completely extinguished at the end of the authorized burn duration.

Ash resulting from combustion must be disposed of at an authorized facility.

###### 4.1.2 **Favorable Weather for Smoke Dispersion**

Open burning shall not proceed unless the recorded Environment Canada Ventilation Index Forecast for the area is greater than 55 (GOOD) for the morning and afternoon of the proposed burn. In order to make this

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determination, the Environment Canada Ventilation Index Forecast for the area shall be obtained prior to ignition. The contact number for the forecast is 1-888-281-2992. Ventilation index forecasts can also be obtained from:

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-pollution/smoke-burning/ventilation-index>

Open burning of Clean Dry Wood must not be initiated or continued if the local air flow will cause the smoke to negatively impact a nearby population or cause pollution. No burning shall occur during periods of fire hazard or when burning is prohibited by other agencies. Also, local weather conditions must be adequate to provide good smoke dispersion and burning must not be initiated or continued if the local air flow causes the smoke to reach nearby residential areas, or cause pollution to residential areas.

#### 4.1.3 **Fire Accelerant**

A suitable amount of approved fire accelerant such as diesel fuel or commercial fire starter gel or a flame-thrower shall be used to ensure efficient and rapid ignition of the Dry Clean Wood.

#### 4.1.4 **Minimization of Smoke**


The burn shall be tended in a manner that ensures minimization of smoke emissions. Measures to minimize smoke shall include, but not necessarily be limited to: stacking of waste in a manner that eliminates inclusion of dirt; waiting to burn until wastes are reasonably dry after any significant precipitation event; application of adequate forced air to ensure quick ignition; and using adequate equipment and staff.

#### 4.1.5 **Smoke Minimization Plan**

Prior to burning, a contingency plan must be in place detailing how the open burn will be extinguished in the event of any of the following occurring:

- i) Inadequate smoke dispersion in the surrounding environment;
- ii) wood residue continues to smoulder after the authorized burn period; and
- iii) the director requires that the open burn be extinguished for environmental protection reasons.

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At a minimum, the plan must detail the actions to be taken to extinguish the open burn should any of the above conditions occur. The plan shall be made available to the director upon request.

#### 4.1.6 Extinguishment

All combustion shall be completely extinguished at the end of the authorized period as set out in Section 4.1.1.

#### 4.1.7 Fire Supervision and Suppression

An attendant shall be on-site to supervise the burn. The attendant shall inspect the burn pile regularly and ensure that it is burning well and not causing smoke as per Section 3.1.5. Adequate fire suppression equipment shall be available for the entire duration of the event and must be capable of extinguishing the fire if necessary.

#### 4.1.8 Cessation of Burn

The operational certificate holder shall, at the discretion of the director, immediately extinguish any burn or refrain from igniting further burns for any time period specified by the director.

### 4.2 Operational Requirements for Disposal of Septage

#### 4.2.1 Freeboard and Berms


A minimum freeboard of 50 centimeters shall be maintained at all times. The lagoon berms shall be maintained in good working order and the director shall be notified immediately of any failure or overflow.

#### 4.2.2 Lagoon Closure

If the lagoons are to be closed, the sludge must be allowed to dewater to a moisture content that will support final cover. The lagoons must then be covered with a minimum of 1 meter of compacted soil and sloped to promote runoff, or as otherwise specified by the STLMP specified in section 3.1.

## 5. REPORTING REQUIREMENTS

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### 5.1 Routine Reporting

The operational certificate holder must submit all reporting required by this operational certificate by email to the Ministry's Routine Environmental Reporting Submission Mailbox at [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca) or as otherwise instructed by the director. For guidelines on how to properly name the files and email subject lines or for more information visit the Ministry website: <http://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/routine-environmental-reporting-submission-mailbox>


### 5.2 Non-compliance Notification

- (a) The operational certificate holder must immediately notify the director or designate by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca), or as otherwise instructed by the director of any non-compliance with the requirements of this authorization by the operational certificate holder and must take remedial action to remedy any effects of such non-compliance.
- (b) The operational certificate holder must provide the director with written confirmation of all such non-compliance events, including available test results within 24 hours of the original notification by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca), or as otherwise instructed by the director.

### 5.3. Non-compliance Reporting

- (a) If the operational certificate holder fails to comply with any of the requirements of this authorization, the operational certificate holder must, within 30 days of such non-compliance, submit to the director a written report that is satisfactory to the director and includes, but is not necessarily limited to, the following:
  - (i) all relevant test results obtained by the operational certificate holder related to the non-compliance;
  - (ii) an explanation of the most probable cause(s) of the non-compliance, and

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- (iii) a description of remedial action planned and/or taken by the operational certificate holder to prevent similar non-compliance(s) in the future.
- (b) The operational certificate holder must submit all non-compliance reporting required to be submitted under this section by email to the Ministry's Compliance Reporting Submission Mailbox at: [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca) or as otherwise instructed by the director. For guidelines on how to report a non-compliance or for more information visit the Ministry website:

<https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/compliance-reporting-mailbox>

#### 5.4. **Annual Operations and Monitoring Report**

- (a) The operational certificate holder must submit an Annual Operations and Monitoring Report, for the preceding calendar year, to the director on or before March 31 of each year.
- (b) The Annual Operations and Monitoring Report must include the following information:
  - (i) Total annual volume of burned wood waste;
  - (ii) Total number of burn dates including venting forecast information;
  - (iii) Total annual volume of septage discharged to the septage ponds;
  - (iv) Summary of complaints and nuisances and description of remedial action planned and/or taken by the operational certificate holder to prevent similar complaints and nuisances in the future;
  - (v) Summary of non-compliance notifications and non-compliance reporting and description of remedial action planned and/or taken by the operational certificate holder to prevent similar non-compliance(s) in the future;

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- (vi) Annual status form in accordance with the instructions and template at the ministry website.

<https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/annual-status-form>

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THIS AGREEMENT executed in triplicate and dated for reference the 15 day of May, 1987. IN PURSUANCE OF THE LAND ACT (Section 36).

LICENSE No. 6402900 FILE No. 6402900

Between: HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, represented by the Minister Responsible for Crown Lands, Parliament Buildings, Victoria, British Columbia; (hereinafter called the "Owner") OF THE FIRST PART

WITNESSES THAT WHEREAS the Owner has agreed to grant to the Licensee a license over that parcel of land described in the schedule attached entitled Legal Description (hereinafter referred to as the "Land");

and Robert Leonard Hamilton, Contractor, having a mailing address at Post Office Box 48, Sandspit, British Columbia VOT 1T0

(hereinafter called the "Licensee") OF THE SECOND PART

NOW, THEREFORE, in consideration of the fee to be paid by, and the covenants of, the Licensee, the parties agree as follows:

Article I—Grant of License

(1.01) The Owner, on the terms set forth herein, hereby grants to the Licensee a license to enter on the Land for the purposes described in the schedule attached entitled the Special Proviso Schedule (hereinafter called the "Special Proviso Schedule").

Article II—Duration

(2.01) The duration of the license and the rights herein granted shall be for a term of 10 years commencing on the May 15, 1987 (herein called the "Commencement Date") unless cancelled in accordance with the terms hereof.

Article III—License Fee

(3.01) The Licensee shall pay to the Owner, in advance, on the Commencement Date, the license fee as prescribed in the Fee Schedule attached.

Article IV—Licensee's Covenants

- (4.01) The Licensee covenants with the Owner (a) to pay the license fee due at the address of the Owner first above written or at such other place as the Owner may specify from time to time; (b) to pay and discharge when due all applicable taxes, levies, charges and assessments now or hereafter assessed, levied or charged which relate to the Land or any improvements thereon (herein called "Realty Taxes") which the Licensee is liable to pay; (c) to observe, abide by and comply with all applicable laws, bylaws, orders, directions, ordinances and regulations of any competent governmental authority in any way affecting the Land and improvements situate thereon, or their use and occupation; (d) not to commit or suffer any willful or voluntary waste, spoil or destruction on the Land or do or suffer to be done thereon anything that may be or become a nuisance or annoyance to the owners or occupiers of adjoining land; (e) to deliver to the Owner from time to time, upon demand, proof of insurance provided for in subsection 4.01 (k), receipts or other evidence of payment of Realty Taxes, insurance premiums and other monetary obligations of the Licensee required to be observed by the Licensee pursuant to this license; (f) to indemnify and save the Owner harmless against all losses, damages, costs and liabilities, including fees of solicitors and other professional advisors arising out of (i) any breach, violation or non-performance of any covenant, condition or agreement in this license by the Licensee, (ii) any personal injury, death or property damage occurring on the Land or happening by virtue of the Licensee's occupation of the Land, and the Owner may add the amount of such losses, damages, costs and liabilities to the license fee and the amount so added shall be payable to the Owner immediately; (g) to keep the Land in a safe, clean and sanitary condition satisfactory to the Owner and to make clean and sanitary any portion of the Land or any improvement that the Owner may direct by notice in writing to the Licensee; (h) to permit the Owner, or his authorized representative to enter upon the Land at any time to examine its condition; (i) to use and occupy the Land in accordance with the provisions of this license including those set forth in the Special Proviso Schedule; (j) on the expiration or at the earlier cancellation of this license (i) to quit peaceably and deliver possession of the Land to the Owner, (ii) to remove all buildings, machinery, plant equipment and apparatus and all other improvements to or things on the Land, from the Land,

(iii) to restore the surface of the Land to its original condition, and to the extent necessary, this covenant shall survive the expiration or cancellation of this license;

(k) to effect and keep in force during the term, insurance protecting the Owner and the Licensee (without any rights of cross-claim or subrogation against the Owner) against claims for personal injury, death, property damage or third party or public liability claims arising from any accident or occurrence on the Land to an amount not less than \$ 1,000,000.00 PROVIDED, however, that the Owner may, in his sole discretion, waive the requirements of this subsection on the delivery to the Owner of evidence that the Licensee is self insured;

(l) notwithstanding subsection (k) of section 4.01, the Owner may from time to time notify the Licensee that the amount of insurance posted by the Licensee pursuant to that subsection be changed and the Licensee shall, within 60 days of receiving such notice, cause the amount of insurance posted, pursuant to subsection (k) of section 4.01 to be changed to the amount specified in the notice and deliver to the Owner written confirmation of the change except that when the Licensee is self-insuring this section shall not apply;

(m) not to interfere with the activities of any other person to enter on and use the Land under a prior or subsequent license granted by the Owner.

Article V—Assignment

(5.01) The Licensee shall not assign this license or sublicense any part of the Land without the prior written consent of the Owner.

Article VI—Cancellation

(6.01) In the event that (a) the Owner requires the Land for his own use or in his sole discretion, considers that it is in the public interest to cancel the rights herein granted, in whole or in part;

(b) the Licensee ceases to use the Land for the purposes permitted herein; (c) the Owner, in his sole discretion, considers that it is no longer necessary for the Licensee to use the Land for the purposes permitted herein;

the Owner may on 90 days written notice to the Licensee, cancel this license and the rights herein granted, in whole or in part.

(6.02) In the event that the Licensee fails to observe or perform any of the covenants, agreements, provisions or conditions contained herein, and such failure continues for a period of 60 days next after the giving of written notice by the Owner to the Licensee of the nature of the failure, the Owner may cancel this license in accordance with the Land Act and, notwithstanding subsection (4.01) (j), any buildings, machinery, plant equipment and apparatus and all other improvements to the Land shall become, at the discretion of the Owner, the property of the Owner.

(6.03) In the event that (a) the license hereby granted should be taken in execution or attachment by any person or the Licensee commits an act of bankruptcy, becomes insolvent or is petitioned into bankruptcy or voluntarily enters into an arrangement with his creditors;

(b) The Owner discovers that the Licensee either in his application for this license or otherwise has, in the opinion of the Owner, misrepresented or withheld any fact material to the application; the Owner may on 90 days written notice to the Licensee, cancel this license and the rights herein granted.

(6.04) Thirty days after the expiration or cancellation of this license, any improvements or fixtures that remain unremoved from the Land shall be absolutely forfeited to and become the property of the Owner and the Owner may remove them from the Land and the Licensee shall, on demand, compensate the Owner for all costs incurred by the Owner respecting their removal.

(6.05) The Licensee shall not be entitled to any compensation, whether for damages or otherwise, in respect of a cancellation of this license by the Owner under this Article.

(9.06) The terms and provisions of this license shall extend to, be binding upon and enure to the benefit of the parties hereto and their successors and permitted assignees.

(9.07) Time is of the essence in this agreement.

Article VII—Security

- (7.01) The security in the sum of \$ 1,000.00 and all rights, privileges, benefits and interests accruing thereto delivered by the Licensee to the Owner (herein called the "Security") to guarantee the performance of the Licensee's obligations under this license shall be maintained in effect until such time as the Owner certifies in writing that such obligations have been fully performed; provided, however, that the Owner may, in his sole discretion, waive the requirements of this subsection.
(7.02) In the event the Licensee should default in the performance of any of his obligations hereunder, it shall be lawful for the Owner, in his sole discretion, to sell, call in and convert the Security, or any part of it, and such Security shall be deemed to have been absolutely forfeited to the Owner.
(7.03) The rights of the Owner under this Article shall be deemed to continue in full force and effect notwithstanding the expiration or earlier cancellation of this license.
(7.04) Notwithstanding any amount of Security stated to be required under section 7.01 the Owner may, from time to time by notice to the Licensee, demand the amount to be changed to that specified in a notice and the Licensee shall, within 60 days of such notice, change the Security to that specified and provide the Owner with evidence of the change, except that when no Security is required under section 7.01 this section shall not apply.

Article VIII—Notice

- (8.01) Where service of a notice or a document is required under this license, the notice or document shall be in writing and shall be deemed to have been served if delivered to, or if sent by prepaid registered mail addressed to, the Owner and the Licensee at the addresses specified for each on the first page of this license, and where service is by registered mail the notice or document shall be conclusively deemed to have been served on the eighth day after its deposit in a Canada Post office at any place in Canada.
(8.02) Either party may, by notice in writing to the other, specify another address for service of notices under this license and where another address is specified under this section, notices shall be mailed to that address in accordance with this Article.
(8.03) Notwithstanding section 8.01, any written notice to be served or given by the Owner to the Licensee under this license shall be effectively given or served by posting the same in a conspicuous place on the Land.

Article IX—Miscellaneous

- (9.01) No term, condition, covenant or other provision herein shall be considered to have been waived by the Owner unless such waiver is expressed in writing by the Owner. Any such waiver of any term, condition, covenant or other provision herein shall not be construed as or constitute a waiver of any further or other breach of the same or any other term, condition, covenant, or other provision and the consent or approval of the Owner to any act by the Licensee requiring the consent or approval of the Owner shall not be considered to waive or render unnecessary such consents or approvals to any subsequent similar act by the Licensee.
(9.02) No remedy conferred upon or reserved to the Owner is exclusive of any other remedy herein or provided by law, but such remedy shall be cumulative and shall be in addition to any other remedy herein or hereafter existing at law, in equity, or by statute.
(9.03) This license is subject to:
(a) all subsisting grants to or rights of any person made or acquired under the Coal Act, Forest Act, Mineral Tenure Act, Petroleum and Natural Gas Act, Range Act, Water Act or Wildlife Act, or any extension or renewal of the same, whether or not the Licensee has actual notice of them;
(b) the exceptions and reservations of rights, interests, privileges and titles referred to in section 47 of the Land Act; AND
(c) any prior disposition made pursuant to the Land Act.
(9.04) The Licensee acknowledges and agrees with the Owner that
(a) any interference with the rights of the Licensee under this license by virtue of the exercise or operation of the rights, privileges or interests described in section 9.03 shall not constitute a breach of the Owner's obligations hereunder and the Licensee releases and discharges the Owner from and against any claim for loss or damage arising directly or indirectly out of any such interference;
(b) all costs and expenses, direct or indirect, that arise out of any interference by the Licensee with the rights, privileges and interests described in section 9.03 shall be borne solely by the Licensee;
(c) he shall not commence or maintain proceedings under section 60 of the Land Act in respect of any interference with his rights hereunder arising directly or indirectly out of the exercise or operation of the rights, privileges or interests described in section 9.03; AND
(d) all schedules referred to in this license form an integral part of this license.
(9.05) This license shall not entitle the Licensee to exclusive possession of the Land, and the Owner may grant licenses to others to use the Land, for any purpose other than that permitted herein, so long as the grant does not materially affect the exercise of the Licensee's rights hereunder. The question of whether a grant materially affects the exercise of the Licensee's rights hereunder shall be determined by the Owner in his sole discretion.

Article X—Interpretation

- (10.01) In this license, unless the context otherwise requires, the singular includes the plural and the masculine includes the feminine gender and a corporation.
(10.02) The captions and headings contained in this license are for convenience only and are not to be construed as defining or in any way limiting the scope or intent of the provisions herein.
(10.03) Where in this license there is a reference to an enactment of the Province of British Columbia or of Canada, that reference shall include a reference to any subsequent enactment of like effect, and unless the context otherwise requires, all statutes referred to herein are enactments of the Province of British Columbia.
(10.04) If any section of this license or any part of a section is found to be illegal or unenforceable, that part or section, as the case may be, shall be considered separate and severable and the remaining parts or sections, as the case may be, shall not be affected thereby and shall be enforceable to the fullest extent permitted by law.

IN WITNESS WHEREOF, the parties have executed this license as of the day and year first above written.

SIGNED, SEALED AND DELIVERED on behalf of Her Majesty the Queen in Right of the Province of British Columbia by a duly authorized representative in the presence of:

Handwritten signature: Louis L. Beatty, Bag 5000, Smithers

Handwritten signature of authorized representative

SIGNED, SEALED AND DELIVERED by Robert Leonard Hamilton in the presence of:

Handwritten signature: Robert Leonard Hamilton

Handwritten signature of Licensee

SIGNED, SEALED AND DELIVERED by in the presence of:

Blank line for signature

Signature of Licensee

The Common Seal of was hereunto affixed in the presence of:

AUTHORIZED SIGNATORY

AUTHORIZED SIGNATORY



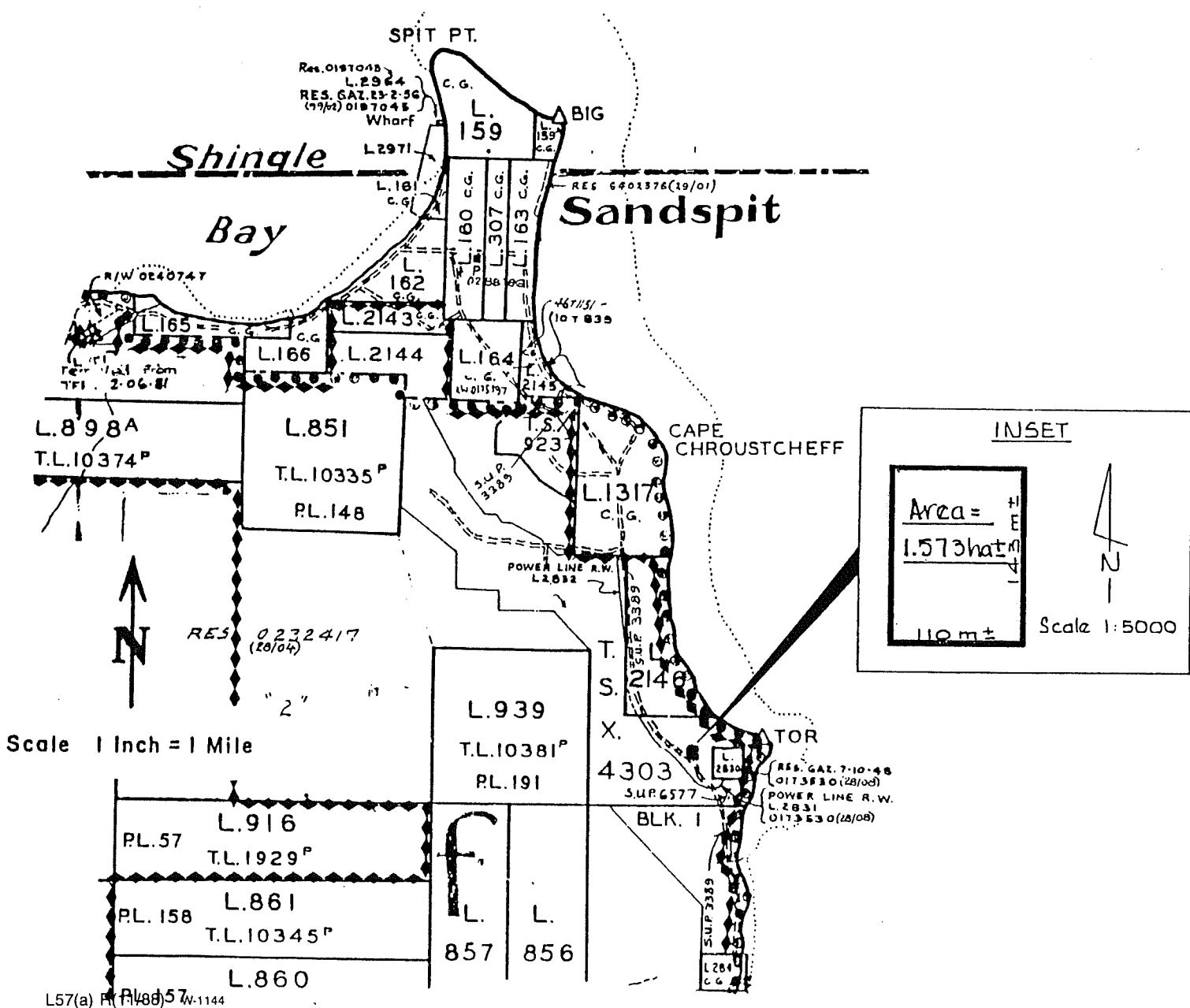
License No.

FILE No. 6402900

1.1 Legal Description

all that parcel or tract of land situated in the vicinity of Lot 2830, Queen Charlotte District,  
more particularly shown outlined in red and containing 1.573 hectares more or less.

1.2 Sketch Plan





LICENSE No.

FILE No. 6402900

1.1 THE FEE FOR THE TERM SHALL BE

- (a) for the first year of the term a fee of \$ 200.00, payable in advance on the Commencement Date, AND
- (b) during the balance of the term, the greater of an annual fee determined by the Owner under this Schedule or \$200, payable in advance, beginning on the first anniversary of the Commencement Date and on each successive anniversary of that date.

1.2 In this Schedule

"Actual Land Value", in reference to the Land, means the actual value of the Land as determined by the British Columbia Assessment Authority;

"Notice", means a notice in writing to the Licensee under section 1.5;

"Rate", in reference to the calculation of the annual fee payable

- (i) during the second, third, fourth and fifth years of the term means 4.5%,
- (ii) during each successive five year period of the term thereafter, means a rate, expressed as a percentage, fixed by the Owner under this Schedule.

1.3 The annual fee payable under section 1.1 (b) shall be an amount equivalent to the product of the Rate multiplied by the Actual Land Value of the Land.

1.4 The Owner shall, from time to time, calculate the annual fee payable under section 1.1 (b) in accordance with section 1.3 and the calculation of the Owner shall be final and binding on the Licensee.

1.5 The Owner shall in each year of the term not later than 15 days before an anniversary of the Commencement Date during those years, give written notice to the Licensee specifying the annual fee payable for the immediately succeeding year of the term.

1.6 If the Owner does not give notice under section 1.5 of the annual fee payable under section 1.1 (b) for any succeeding year of the term after the first year, the annual fee for that year shall be equal to the annual fee calculated or in force during the immediately preceding year of the term.

1.7 The annual fee specified in a Notice shall constitute conclusive evidence of the annual fee payable for the year of the term specified in it.

1.8 The Owner may, for the purpose of calculating the annual fee payable during each successive five year period of the term beginning on the fifth anniversary of the Commencement Date, by notice in writing given to the Licensee not less than 15 days before the commencement of each of those five year periods, establish the Rate at a percentage that he, in his sole discretion, considers appropriate.

LICENSE NO.

FILE NO. 6402900

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WASTE DISPOSAL SITE

1.1 Purpose

The Licensee shall use the Land only for the purpose of disposing of garbage of all kinds and of noxious, offensive or unwholesome substances.

1.2 Special Provision

The Licensee shall

- (a) not undertake any improvement of the Land, except as provided for in this license, without the prior written consent of the Owner;
- (b) adhere to the provisions of his Waste Management Plan issued by the Minister of Environment and Parks.

1.3 Additional Provisions

1.3.1 Notwithstanding anything to the contrary in this license, so long as:

- (i) the Licensee is not in default of any of the terms or conditions of this license and
- (ii) the Licensee has given the Owner, not more than 120 days prior to the \_\_\_\_\_5th\_\_\_\_\_ anniversary of the term herein granted, notice in writing of the Licensee's intention to terminate this license and apply for a new license of the Land,

the Owner may agree to terminate this license and offer a new license of the Land to the Licensee by notice to the Licensee, in writing, at the fee and on the terms and conditions determined by the Owner and contained in the notice;

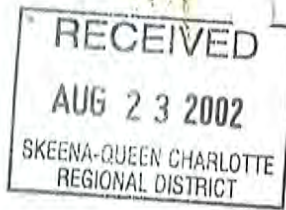
1.3.2 The Licensee shall have a period of 60 days from the date of receipt of the notice from the Owner to accept a new license of the Land by executing the new license contained in the notice and delivering it to the Owner.

1.3.3 At the request of the Owner to have a boundary survey of the Land completed by a British Columbia Land Surveyor under instructions from the Surveyor General, which shall be completed within one year of the request and at the expense of the Licensee.





**Land and Water  
British Columbia Inc.**  
A corporation of the government of British Columbia



August 21, 2002  
Our File: 6402900

James Allen Henry  
Gail Yvonne Henry  
PO Box 332  
Sandspit BC V0T 1T0

Dear Mr. and Mrs. Henry:

Enclosed is an originally executed copy of Licence No. 635373 covering all that parcel or tract of land situated in the vicinity of District Lot 2830, Queen Charlotte District, containing 1.4 hectares, more or less.

This Licence is issued in the name of James Allen Henry and Gail Yvonne Henry for a term of ten (10) years commencing the 15<sup>th</sup> day of May, 1997 for a waste disposal site purposes.

This new Licence replaces Licence No. 633353, which has been noted as expired as of May 15, 1997.

For your information, I have inserted an updated Management Plan Schedule which reflects the dates of the Management Plan held on file in our office, (copy of the Management Plan is attached for your records).

Should you have any further questions, please contact me at (250) 847-7350.

Yours truly,

Barbara Edwards  
Examiner  
Land and Water Management  
Skeena Region

Enclosure

BE/jg

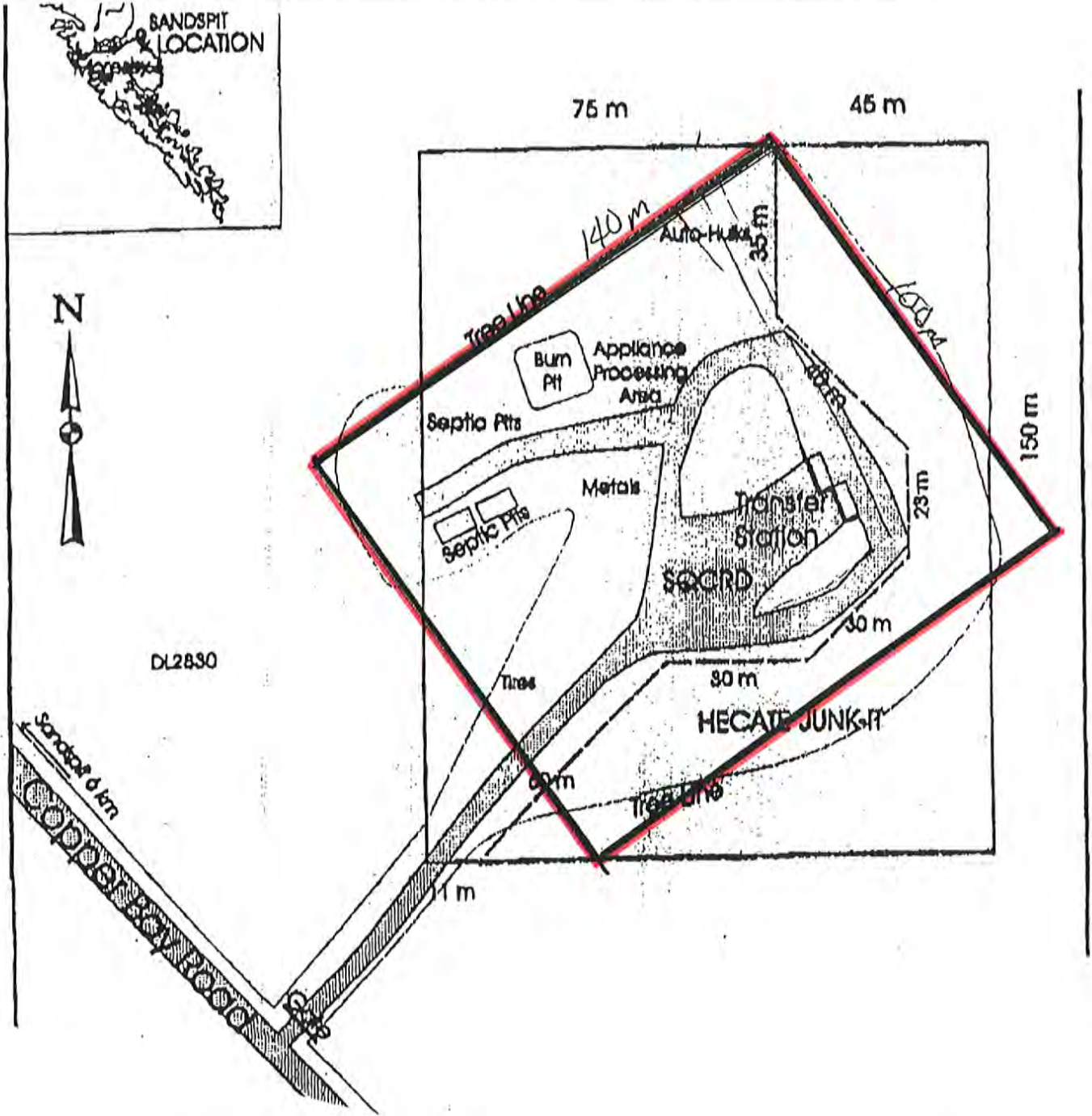
pc: Crown Land Registry Services, Victoria  
BC Assessment Authority, Northwest  
Regional District of Skeena-Queen Charlotte  
Water Land and Air Protection, Pollution Prevention  
Smithers, (Att: Frazer McKenzie)

? most recent (2002) notation of licensed of occupation



LEGAL DESCRIPTION SCHEDULE

ALL THAT PARCEL OR TRACT OF LAND SITUATED IN THE VICINITY OF LOT 2830, QUEEN CHARLOTTE DISTRICT, CONTAINING 1.4 HECTARES, MORE OR LESS

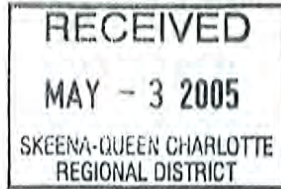




2035

Our File: 6405816

April 26th, 2005



Skeena-Queen Charlotte Regional District  
100 1st Avenue E  
PRINCE RUPERT BC V8J 1A6

Dear Sirs:

**Re: LICENCE OF OCCUPATION — No. 705129**

Enclosed is an originally executed copy of Licence of Occupation No. 705129 which replaces Licence of Occupation No. 634390 covering that part of the West 1/2 of District Lot 233 and unsurveyed Crown land, Queen Charlotte District containing .4600 hectares, more or less.

This Licence of Occupation is issued to Skeena-Queen Charlotte Regional District for a term of 30 years, commencing on the 2nd day of January, 2005, and expiring on January 2nd, 2035 for community solid waste transfer station purposes, as set out in the Management Plan.

Also, for your records, I have enclosed a copy of the approved Management Plan which reflects the one held on file in this office.

Should you have any further questions, please contact Heather Alderson at (250) 565-6402.

Yours truly,

Heather Alderson  
Referrals Clerk

/ha  
Enc.

p.c. BC Assessment Authority, Northwest  
Regional District of Skeena-Queen Charlotte



Licence No.:

705129

File No.: 6405816

Disposition No.: 836365

THIS AGREEMENT is dated for reference January 2nd, 2005 and is made under the *Land Act*.

**BETWEEN:**

**HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA**, represented by the minister responsible for the *Land Act*, Parliament Buildings, Victoria, British Columbia

(the "Province")

**AND:**

**SKEENA-QUEEN CHARLOTTE REGIONAL DISTRICT**

100 1st Ave E

Prince Rupert, BC V8J 1A6

(the "Licensee")

The parties agree as follows:

**ARTICLE 1 - INTERPRETATION**

1.1 In this Agreement,

**"Agreement"** means this licence of occupation;

**"Commencement Date"** means January 2nd, 2005;

**"disposition"** has the meaning given to it in the *Land Act* and includes a licence of occupation;

**"Fees"** means the fees set out in Article 3;

**"Improvements"** includes anything made, constructed, erected, built, altered, repaired or added to, in, on or under the Land, and attached to it or intended to become a part of it, and also includes any clearing, excavating, digging, drilling, tunnelling, filling, grading or ditching of, in, on or under the Land;

**“Land”** means that part or those parts of the following described land shown outlined by bold line on the schedule attached to this Agreement entitled “Legal Description Schedule”:

THAT PART OF THE WEST 1/2 OF DISTRICT LOT 233 AND UNSURVEYED CROWN LAND, QUEEN CHARLOTTE DISTRICT

except for those parts of the land that, on the Commencement Date, consist of highways (as defined in the *Highway Act*) and land covered by water;

**“Management Plan”** means the most recent management plan prepared by you in a form acceptable to us, signed and dated by the parties, and held on file by us;

**“Realty Taxes”** means all taxes, rates, levies, duties, charges and assessments levied or charged, at any time, by any government authority having jurisdiction which relate to the Land, the Improvements or both of them and which you are liable to pay under applicable laws;

**“Security”** means the security referred to in section 6.1 or 6.2, as replaced or supplemented in accordance with section 6.5;

**“Term”** means the period of time set out in section 2.2;

**“we”, “us” or “our”** refers to the Province alone and never refers to the combination of the Province and the Licensee: that combination is referred to as **“the parties”**; and

**“you” or “your”** refers to the Licensee.

- 1.2 In this Agreement, “person” includes a corporation, firm or association and wherever the singular or masculine form is used in this Agreement it will be construed as the plural or feminine or neuter form, as the case may be, and vice versa where the context or parties require.
- 1.3 The captions and headings contained in this Agreement are for convenience only and do not define or in any way limit the scope or intent of this Agreement.
- 1.4 This Agreement will be interpreted according to the laws of the Province of British Columbia.
- 1.5 Where there is a reference to an enactment of the Province of British Columbia or of Canada in this Agreement, that reference will include a reference to every amendment to it, every regulation made under it and any subsequent enactment of like effect and, unless otherwise indicated, all enactments referred to in this Agreement are enactments of the Province of British Columbia.

- 1.6 If any section of this Agreement, or any part of a section, is found to be illegal or unenforceable, that section or part of a section, as the case may be, will be considered separate and severable and the remainder of this Agreement will not be affected and this Agreement will be enforceable to the fullest extent permitted by law.
- 1.7 Each schedule to this Agreement is an integral part of this Agreement as if set out at length in the body of this Agreement.
- 1.8 This Agreement constitutes the entire agreement between the parties and no understanding or agreement, oral or otherwise, exists between the parties with respect to the subject matter of this Agreement except as expressly set out in this Agreement and this Agreement may not be modified except by subsequent agreement in writing between the parties.
- 1.9 Each party will, upon the request of the other, do or cause to be done all lawful acts necessary for the performance of the provisions of this Agreement.
- 1.10 All provisions of this Agreement in our favour and all of our rights and remedies, either at law or in equity, will survive the termination of this Agreement.
- 1.11 Time is of the essence of this Agreement.
- 1.12 Wherever this Agreement provides that an action may be taken, a consent or approval must be obtained or a determination must be made, then you or we, as the case may be, will act reasonably in taking such action, deciding whether to provide such consent or approval or making such determination; but where this Agreement states that you or we have sole discretion to take an action, provide a consent or approval or make a determination, there will be no requirement to show reasonableness or to act reasonably in taking that action, providing that consent or approval or making that determination.

## **ARTICLE 2 - GRANT AND TERM**

- 2.1 On the terms and conditions set out in this Agreement, we grant you a licence of occupation of the Land for community solid waste transfer station purposes, as set out in the Management Plan. You acknowledge this licence of occupation does not grant you exclusive use and occupancy of the Land.
- 2.2 The term of this Agreement commences on the Commencement Date and terminates on the 30th anniversary of that date, or such earlier date provided for in this Agreement.

## **ARTICLE 3 - FEES**

- 3.1 You will pay to us Fees of \$1.00, payable in advance on the Commencement Date and on each anniversary of the Commencement Date.
- 3.2 You acknowledge that we may, on written notice to you and in our sole discretion, change the Fees payable by you under this Agreement.

#### ARTICLE 4 - COVENANTS

- 4.1 You must
- (a) pay, when due,
    - (i) the Fees to us at the address set out in Article 10,
    - (ii) the Realty Taxes, and
    - (iii) all charges for electricity, gas, water and other utilities supplied to the Land for use by you or on your behalf or with your permission;
  - (b) deliver to us, immediately upon demand, receipts or other evidence of the payment of Realty Taxes and all other money required to be paid by you under this Agreement;
  - (c) observe, abide by and comply with
    - (i) all applicable laws, bylaws, orders, directions, ordinances and regulations of any government authority having jurisdiction in any way affecting your use or occupation of the Land or the Improvements, and
    - (ii) the provisions of this Agreement;
  - (d) in respect of the use of the Land by you or by anyone you permit to use the Land, keep the Land and the Improvements in a safe, clean and sanitary condition satisfactory to us, and at our written request, rectify any failure to comply with such a covenant by making the Land and the Improvements safe, clean and sanitary;
  - (e) not commit any wilful or voluntary waste, spoil or destruction on the Land or do anything on the Land that may be or become a nuisance or annoyance to an owner or occupier of land in the vicinity of the Land;
  - (f) use and occupy the Land only in accordance with and for the purposes set out in the Management Plan;
  - (g) not construct, place or affix any Improvement on or to the Land except as permitted in

the Management Plan;

- (h) pay all accounts and expenses as they become due for work performed on or materials supplied to the Land at your request, on your behalf or with your permission, except for money that you are required to hold back under the *Builders Lien Act*;
- (i) if any claim of lien over the Land is made under the *Builders Lien Act* for work performed on or materials supplied to the Land at your request, on your behalf or with your permission, immediately take all steps necessary to have the lien discharged, unless the claim of lien is being contested in good faith by you and you have taken the steps necessary to ensure that the claim of lien will not subject the Land or any interest of yours under this Agreement to sale or forfeiture;
- (j) not cut or remove timber on or from the Land without
  - (i) our prior written consent, and
  - (ii) being granted the right under the *Forest Act* to harvest Crown timber on the Land;
- (k) permit us, or our authorized representatives, to enter on the Land at any time to inspect the Land and the Improvements, provided that in regard to our inspection of the Improvements we take reasonable steps to minimize any disruption of your operations;
- (l) indemnify and save us and our servants, employees and agents harmless against all claims, actions, causes of action, losses, damages, costs and liabilities, including fees of solicitors and other professional advisors, arising out of
  - (i) your breach, violation or nonperformance of a provision of this Agreement, and
  - (ii) any personal injury, bodily injury (including death) or property damage occurring or happening on or off the Land by virtue of your entry upon, use or occupation of the Land,and the amount of all such losses, damages, costs and liabilities will be payable to us immediately upon demand; and
- (m) on the termination of this Agreement,
  - (i) peaceably quit and deliver to us possession of the Land and, subject to paragraphs (ii), (iii) and (iv), the Improvements in a safe, clean and sanitary condition,
  - (ii) within 90 days, remove from the Land any Improvement you want to remove, if



the Improvement was placed on or made to the Land by you and you are not in default of this Agreement,

- (iii) not remove any Improvement from the Land if you are in default of this Agreement, unless we direct or permit you to do so under paragraph (iv),
- (iv) remove from the Land any Improvement that we, in writing, direct or permit you to remove, other than any Improvement permitted to be placed on or made to the Land under another disposition, and
- (v) restore the surface of the Land as nearly as may reasonably be possible to the same condition as it was on the Commencement Date, to our satisfaction, but if you are not directed or permitted to remove an Improvement under paragraph (iv), this paragraph will not apply to that part of the surface of the Land on which that Improvement is located,

and all of your right, interest and estate in the Land will be absolutely forfeited to us, and to the extent necessary, this covenant will survive the termination of this Agreement.

4.2 You will not permit any person to do anything you are restricted from doing under this Article.

## ARTICLE 5 - LIMITATIONS

5.1 You agree with us that

- (a) we are under no obligation to provide access or services to the Land or to maintain or improve existing access roads;
- (b) this Agreement is subject to
  - (i) all subsisting dispositions and subsisting grants to or rights of any person made or acquired under the *Coal Act, Forest Act, Mineral Tenure Act, Petroleum and Natural Gas Act, Range Act, Wildlife Act* or *Water Act*, or any extension or renewal of the same, whether or not you have actual notice of them, and
  - (ii) the exceptions and reservations of interests, rights, privileges and titles referred to in section 50 of the *Land Act*;
- (c) without limiting subsection 4.1(1), you must indemnify and save us and our servants, employees and agents harmless from and against all claims, actions, causes of action, losses, damages, costs and liabilities, including fees of solicitors and other professional advisors, arising out of any conflict between your rights under this Agreement and the

rights of any person under a disposition or under a subsisting grant to or right of any person made or acquired under the *Coal Act, Forest Act, Mineral Tenure Act, Petroleum and Natural Gas Act, Range Act, Wildlife Act or Water Act* (or any prior or subsequent enactment of the Province of British Columbia of like effect), or any extension or renewal of the same, whether or not you have actual notice of them, and the amount of all such losses, damages, costs and liabilities will be payable to us immediately upon demand;

- (d) you release us from all claims, actions, causes of action, suits, debts and demands that you now have or may at any time in the future have against us arising out of any conflict between your rights under this Agreement and the rights of any person under a disposition or under a subsisting grant to or right made or acquired under the enactments referred to in subsection (c), and you acknowledge that this Agreement and your rights under this Agreement are subject to those grants and rights referred to in subsection (c) whether or not you have actual notice of them.
- (e) we may make other dispositions of or over the Land;
- (f) you will make no claim for compensation, in damages or otherwise, in respect of a disposition made under subsection (e), where such disposition does not materially affect the exercise of your rights under this Agreement;
- (g) subject to subsection (f), all of your costs and expenses, direct or indirect, that arise out of any lawful interference with your rights under this Agreement as a result of the exercise or operation of the interests, rights, privileges and titles reserved to us in subsections (b) and (e) will be borne solely by you;
- (h) you will not commence or maintain proceedings under section 65 of the *Land Act* in respect of any lawful interference with your rights under this Agreement that arises as a result of the exercise or operation of the interests, rights, privileges and titles described in subsections (b) and (e);
- (i) you will not remove or permit the removal of any Improvement from the Land except as expressly permitted or required under this Agreement;
- (j) any interest you may have in the Improvements ceases to exist and becomes our property upon the termination of this Agreement, except where an Improvement may be removed under paragraph 4.1(m)(ii), (iii) or (iv) in which case any interest you may have in that Improvement ceases to exist and becomes our property if the Improvement is not removed from the Land within the time period set out in paragraph 4.1(m)(ii) or the time period provided for in the direction or permission given under paragraph 4.1(m)(iii); and
- (k) if, after the termination of this Agreement, we permit you to remain in possession of the

Land and we accept money from you in respect of such possession, a tenancy from year to year will not be created by implication of law and you will be deemed to be a monthly occupier only subject to all of the provisions of this Agreement, except as to duration, in the absence of a written agreement to the contrary.

#### ARTICLE 6 - SECURITY AND INSURANCE

6.1 On the Commencement Date, you will deliver to us security in the amount of \$0.00 which will

- (a) guarantee the performance of your obligations under this Agreement;
- (b) be in the form required by us; and
- (c) remain in effect until we certify, in writing, that you have fully performed your obligations under this Agreement.

6.2 Despite section 6.1, your obligations under that section are suspended for so long as you maintain in good standing other security acceptable to us to guarantee the performance of your obligations under this Agreement and all other dispositions held by you.

6.3 We may use the Security for the payment of any costs and expenses incurred by us to perform any of your obligations under this Agreement that are not performed by you or to pay any overdue Fees and, if such event occurs, you will, within 30 days of that event, deliver further Security to us in an amount equal to the amount drawn down by us.

6.4 After we certify, in writing, that you have fully performed your obligations under this Agreement, we will return to you the Security maintained under section 6.1, less all amounts drawn down by us under section 6.3.

6.5 You acknowledge that we may, from time to time, notify you to

- (a) change the form or amount of the Security; and
- (b) provide and maintain another form of Security in replacement of or in addition to the Security posted by you under this Agreement;

and you will, within 60 days of receiving such notice, deliver to us written confirmation that the change has been made or the replacement or additional form of Security has been provided by you.

6.6 You must

- (a) without limiting your obligations or liabilities under this Agreement, at your expense,

effect and keep in force during the Term Comprehensive/Commercial General Liability insurance protecting us as an additional insured in an amount of not less than \$1,000,000.00 inclusive per occurrence insuring against liability for personal injury, bodily injury (including death) or property damage, and claims for liability assumed under contract, arising from all accidents or occurrences on the Land or the Improvements;

- (b) on the Commencement Date and immediately upon demand, deliver to us a completed "Province of British Columbia Certificate of Insurance" for all insurance required to be maintained by you under this Agreement;
- (c) ensure that all insurance required to be maintained by you under this Agreement is
  - (i) placed with insurers licensed in British Columbia,
  - (ii) primary and does not require the sharing of any loss by any insurer that insures us, and
  - (iii) endorsed to provide us with 30 days' advance written notice of cancellation or material change; and
- (d) deliver or cause to be delivered to us, immediately upon demand, certified copies of all policies of insurance required to be maintained by you under this Agreement.

6.7 You acknowledge that we may, from time to time, notify you to

- (a) change the amount of insurance set out in subsection 6.6(a); and
- (b) provide and maintain another type or types of insurance in replacement of or in addition to the insurance previously required to be maintained by you under this Agreement;

and you will, within 60 days of receiving such notice, cause the amounts and types to be changed and deliver to us a completed "Province of British Columbia Certificate of Insurance" for all insurance then required to be maintained by you under this Agreement.

6.8 Despite subsections 6.6(a) to (d) and section 6.7, your obligations under those sections are suspended for so long as we in our sole discretion accept your decision to self insure in respect of the matters covered by those sections.

If we no longer accept your decision to self-insure in respect of the matters covered by subsections 6.6(a) to (d) and section 6.7, we will provide notice to you of our decision and you must, within 30 days of such notice, obtain the insurance described in section 6.6(a).

---

**ARTICLE 7 - ASSIGNMENT**

- 7.1 You must not sublicense, assign, mortgage or transfer this Agreement, or permit any person to use or occupy the Land, without our prior written consent, which consent we may withhold in our sole discretion.
- 7.2 For the purpose of section 7.1, if you are a corporation, a change in control (as that term is defined in subsection 2(3) of the *Business Corporations Act*) will be deemed to be a transfer of this Agreement.
- 7.3 Section 7.2 does not apply to a corporation if the shares of the corporation which carry votes for the election of the directors of the corporation trade on a stock exchange located in Canada.
- 7.4 Prior to considering a request for our consent under section 7.1, we may require you to meet certain conditions, including without limitation, that you submit to us a “site profile”, “preliminary site investigation” or “detailed site investigation” (as those terms are defined in the *Environmental Management Act*) for the Land or other similar type of investigation of the Land.

**ARTICLE 8 - TERMINATION**

- 8.1 You agree with us that
- (a) if you
    - (i) default in the payment of any money payable by you under this Agreement, or
    - (ii) fail to observe, abide by and comply with the provisions of this Agreement (other than the payment of any money payable by you under this Agreement),and your default or failure continues for 60 days after we give written notice of the default or failure to you,
  - (b) if, in our opinion, you fail to make diligent use of the Land for the purposes set out in this Agreement, and your failure continues for 60 days after we give written notice of the failure to you;
  - (c) if you
    - (i) become insolvent or make an assignment for the general benefit of your creditors,
    - (ii) commit an act which entitles a person to take action under the *Bankruptcy and*

*Insolvency Act* (Canada) or a bankruptcy petition is filed or presented against you or you consent to the filing of the petition or a decree is entered by a court of competent jurisdiction adjudging you bankrupt under any law relating to bankruptcy or insolvency, or

- (iii) voluntarily enter into an arrangement with your creditors;
- (d) if you are a corporation,
  - (i) a receiver or receiver-manager is appointed to administer or carry on your business, or
  - (ii) an order is made, a resolution passed or a petition filed for your liquidation or winding up;
- (e) if you are a society, you convert into a company in accordance with the *Society Act* without our prior written consent;
- (f) if this Agreement is taken in execution or attachment by any person; or
- (g) if we require the Land for our own use or, in our opinion, it is in the public interest to cancel this Agreement and we have given you 90 days' written notice of such requirement or opinion;

this Agreement will, at our option and with or without entry, terminate and your right to use and occupy the Land will cease.

8.2 If the condition complained of (other than the payment of any money payable by you under this Agreement) reasonably requires more time to cure than 60 days, you will be deemed to have complied with the remedying of it if you commence remedying or curing the condition within 60 days and diligently complete the same.

8.3 You agree with us that

- (a) you will make no claim for compensation, in damages or otherwise, upon the lawful termination of this Agreement under section 8.1; and
- (b) our remedies under this Article are in addition to those available to us under the *Land Act*.

## ARTICLE 9 - DISPUTE RESOLUTION

9.1 If any dispute arises under this Agreement, the parties will make all reasonable efforts to resolve the dispute within 60 days of the dispute arising (or within such other time period

agreed to by the parties) and, subject to applicable laws, provide candid and timely disclosure to each other of all relevant facts, information and documents to facilitate those efforts.

- 9.2 Subject to section 9.5, if a dispute under this Agreement cannot be resolved under section 9.1, we or you may refer the dispute to arbitration conducted by a sole arbitrator appointed pursuant to the *Commercial Arbitration Act*.
- 9.3 The cost of the arbitration referred to in section 9.2 will be shared equally by the parties and the arbitration will be governed by the laws of the Province of British Columbia.
- 9.4 The arbitration will be conducted at our offices (or the offices of our authorized representative) in Prince George, British Columbia, and if we or our authorized representative have no office in Prince George, British Columbia, then our offices (or the offices of our authorized representative) that are closest to Prince George, British Columbia.
- 9.5 A dispute under this Agreement in respect of a matter within our sole discretion cannot, unless we agree, be referred to arbitration as set out in section 9.2.

#### ARTICLE 10 - NOTICE

- 10.1 Any notice required to be given by either party to the other will be deemed to be given if mailed by prepaid registered mail in Canada or delivered to the address of the other as follows:

to us

Land and Water British Columbia Inc.  
200-1488 4th Avenue  
Prince George, BC V2L 4Y2;

to you

Skeena-Queen Charlotte Regional District  
100 1st Ave E  
Prince Rupert, BC V8J 1A6;

or at such other address as a party may, from time to time, direct in writing, and any such notice will be deemed to have been received if delivered, on the day of delivery, and if mailed, 7 days after the time of mailing, except in the case of mail interruption in which case actual receipt is required.

- 10.2 In order to expedite the delivery of any notice required to be given by either party to the other, a concurrent facsimile copy of any notice will, where possible, be provided to the other party

but nothing in this section, and specifically the lack of delivery of a facsimile copy of any notice, will affect the deemed delivery provided in section 10.1.

- 10.3 The delivery of all money payable to us under this Agreement will be effected by hand, courier or prepaid regular mail to the address specified above, or by any other payment procedure agreed to by the parties, such deliveries to be effective on actual receipt.

#### ARTICLE 11 - MISCELLANEOUS

- 11.1 No provision of this Agreement will be considered to have been waived unless the waiver is in writing, and a waiver of a breach of a provision of this Agreement will not be construed as or constitute a waiver of any further or other breach of the same or any other provision of this Agreement, and a consent or approval to any act requiring consent or approval will not waive or render unnecessary the requirement to obtain consent or approval to any subsequent same or similar act.
- 11.2 No remedy conferred upon or reserved to us under this Agreement is exclusive of any other remedy in this Agreement or provided by law, but that remedy will be in addition to all other remedies in this Agreement or then existing at law, in equity or by statute.
- 11.3 The grant of a sublicense, assignment or transfer of this Agreement does not release you from your obligation to observe and perform all the provisions of this Agreement on your part to be observed and performed unless we specifically release you from such obligation in our consent to the sublicense, assignment or transfer of this Agreement.
- 11.4 This Agreement extends to, is binding upon and enures to the benefit of the parties, their heirs, executors, administrators, successors and permitted assigns.
- 11.5 If, due to a strike, lockout, labour dispute, act of God, inability to obtain labour or materials, law, ordinance, rule, regulation or order of a competent governmental authority, enemy or hostile action, civil commotion, fire or other casualty or any condition or cause beyond your reasonable control, other than normal weather conditions, you are delayed in performing any of your obligations under this Agreement, the time for the performance of that obligation will be extended by a period of time equal to the period of time of the delay so long as
- (a) you give notice to us within 30 days of the commencement of the delay setting forth the nature of the delay and an estimated time frame for the performance of your obligation; and
  - (b) you diligently attempt to remove the delay.
- 11.6 You agree with us that



- (a) we are under no obligation, express or implied, to provide financial assistance or to contribute toward the cost of servicing, creating or developing the Land or the Improvements and you are solely responsible for all costs and expenses associated with your use of the Land and the Improvements for the purposes set out in this Agreement; and
- (b) nothing in this Agreement constitutes you as our agent, joint venturer or partner or gives you any authority or power to bind us in any way.

11.7 This Agreement does not override or affect any powers, privileges or immunities to which you are entitled under any enactment of the Province of British Columbia.

The parties have executed this Agreement as of the date of reference of this Agreement.

SIGNED on behalf of **HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA** by Land and Water British Columbia Inc., authorized representative of the minister responsible for the *Land Act*

\_\_\_\_\_  
 Authorized Signatory of  
 Land and Water British Columbia Inc.

SIGNED on behalf of **SKEENA-QUEEN CHARLOTTE REGIONAL DISTRICT** by its authorized signatories

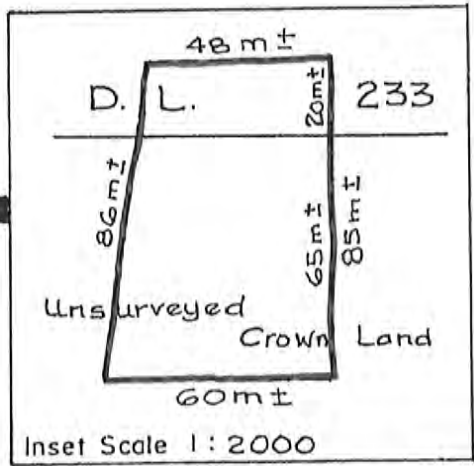
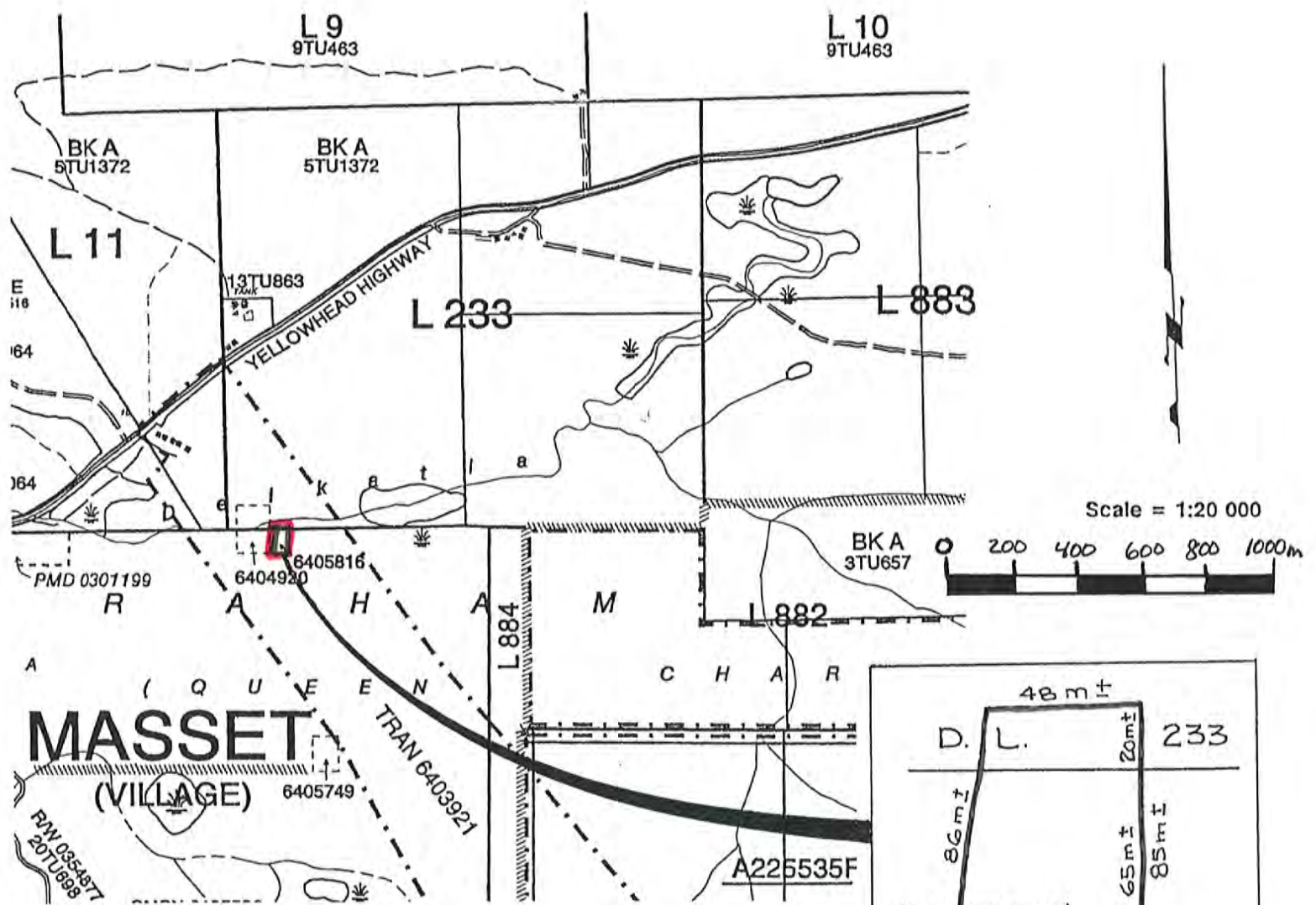
\_\_\_\_\_  
 Authorized Signatory

\_\_\_\_\_  
 Authorized Signatory

LEGAL DESCRIPTION SCHEDULE

THAT PART OF THE WEST 1/2 OF DISTRICT LOT 233 AND UNSURVEYED CROWN LAND,  
QUEEN CHARLOTTE DISTRICT

705129



016158290.002037821  
 103K.010  
 6405814

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**APPENDIX E**  
**Technical Memorandum No. 3, Cost Recovery**

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# SOLID WASTE MANAGEMENT PLAN UPDATE



**DRAFT Technical Memorandum No. 3:**

## **COST RECOVERY**

**July, 2022**

**Prepared by: Sperling Hansen Associates**

Revisions:

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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 municipal solid waste (MSW) collection, disposal, reduction and recycling 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 the many initiatives outlined therein have been implemented.

Sperling Hansen Associates (SHA) was hired in November 2021 to assist with the SWMP update to its final submission to the ENV in 2023. This Technical Memorandum (TM) is part of Task 2 (Develop and Finalize Technical Memos) as outlined in SHA's project proposal and aligns with Step 2 and Step 3 of the Province's 2016 Guide to Solid Waste Management Planning (Guide) and will be presented to the NCRD's Public and Technical Advisory Committee for review and discussion.

## 2. CONTEXT AND SCOPE

This third TM provides the following:

- Based on information provided by NCRD staff, current solid waste management system costs
- The topics chosen to be reviewed by PTAC relating to system costs
- Solid waste management system cost controls and recovery.

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 in the Islands and Mainland service areas including the 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 is currently implementing 109 of their 137 initiatives outlined in the SWMP. Twelve of the initiatives were not completed and will be carried forward to the updated SWMP. The list of initiatives is presented in Appendix A with the following color coding:

Ininitiative Complete and Carried Forward
Ininitiative in Progress and Carried Forward
Ininitiative not Complete and Carried Forward
Ininitiative not Complete and Not Carried Forward

### 2.2 Guiding Principles for Waste Disposal

As reviewed in Technical Memo 1, 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 topics relating to cost recovery were put forward by the NCRD Public and Technical Advisory Committee (PTAC) early in the process:

1. Ensure that possible negative reactions to some plan policies are addressed during implementation
2. Ensure that the public and system users are participants in any modifications to this plan
3. Provide a framework to resolve disputes arising from implementation of the plan
4. Ensure that the entire system is funded to accomplish the goals of this plan
5. Focus the SWMP on the following:
  - a) Improving the operational and financial efficiency of the NCRD waste management systems
  - b) Investigating landfill gas utilization and carbon credits.

The above list is not exhaustive and can be modified prior to development of the draft SWMP and presentation to the public during consultation. Note that items 1, 2, 3, 5a, and 5 were included in TM1 and TM2.

### 2.3 Provincial and Local Targets

The ENV’s current Service Plan outlines the following provincial targets for 2022 to 2025:

**Table 2-1: Provincial Service Plan Disposal Targets**

Target	2022/2023	2023/2024	2024/2025
Per capita municipal solid waste disposal (kg per person)	460	440	420
Per cent of population covered by an organic waste disposal restriction (%)	80	80	80

The ENV’s long term goal for the per capita disposal rate is 350 kg/person. They are cognizant of the differing abilities and resources required for all regions in the province to achieve such goals, especially with respect to revenue generation, available revenue for disposal facility upgrades, transportation costs for marketable materials, and available markets for recyclable materials.

SHA compiled the tonnage information provided by NCRD staff and facility managers to help determine the quantity and types of material that are currently being transported and managed in the region and transported out of the region. The following table outlines the quantity of disposed MSW at the two landfills in the NCRD.

**Table 2-2: Disposed Quantities**

Location	Material Type	Source	Refined Source (SHA)	Refined Type (SHA)	Tonnes	Cubic Meters	Annual Waste Statistics
<b>Prince Rupert Landfill</b>							
	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		
<b>Total Mainland Refuse</b>					11,334		
						<b>2021 Tonnes</b>	11,334
						<b>Mainland 2021 Census Population</b>	13,510
						<b>2021 tonnes/per capita/year</b>	0.84
<b>Islands Landfill</b>							
	Residential MSW	Big Red	Moresby Island	Res	404	2,021	
	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	
<b>Total Islands Refuse - not including C&amp;D that was used to build berm</b>					1,560	7,799	
						<b>2021 Tonnes</b>	1,560
						<b>Islands 2021 Census Population</b>	4,582
						<b>2021 tonnes/per capita/year</b>	0.34
<b>Total for NCRD</b>							
						<b>2021 Tonnes</b>	12,894
						<b>2021 Census Population</b>	18,181
						<b>2021 tonnes/per capita/year</b>	0.71

As seen above the disposal rate in the Islands service area is substantially lower than in the Mainland service area. It should be noted that these numbers depend on many factors that are interpreted differently from time to time and by different people. The data is dependent on good, well organized and consistent record keeping from year to year.

Figure 1 shows the facilities in the region and the distances between transfer stations and disposal and processing facilities (e.g., Islands Landfill and the NCRD Recycling Depot).

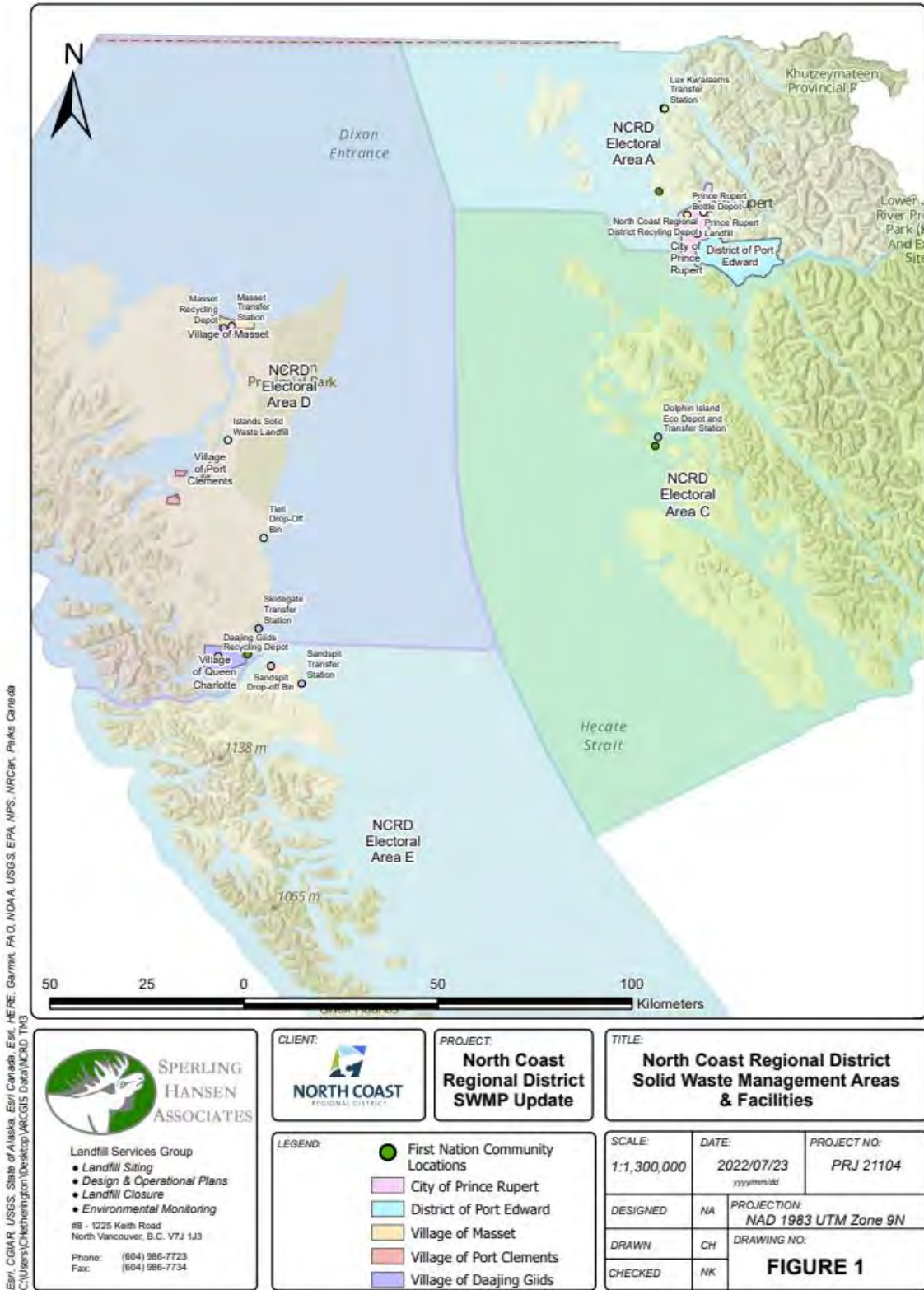


Figure 1: NCRD Solid Waste Disposal System Overview [NK1][NK2][NK3] - DRAFT

### 3. CURRENT SERVICES AND COSTS

The purpose of this section is to outline the current solid waste management services and sub-services in the region with specific attention to those that the NCRD provide. The costs are shown in tables as well as the revenues generated to cover the costs. More detailed examination of rates are also provided to indicate where revenues do not cover costs. The addition of SWMP strategies and the financial impact are shown in Section 4 and the five-year financial plan is provided in Section 5.

#### 3.1 Solid Waste Management Services and Provider

Location of facilities and collection programs plays an important part in regional solid waste management, particularly in understanding the costs associated with transporting materials from one facility to another and how these costs are dependent on fuel and ferry rates. The region has been divided into two services areas: Islands Service Area (ISA) and Mainland Service Area (MSA), including the programs and facilities listed in the table below. The numbers in brackets beside the programs and facilities represent the sub-services in the ISA as shown in the NCRD budget.

**Table 3-1: SWM Services and Provider**

Service	Location	Owned & Operated By
<b>Islands Service Area</b>		
Islands Garbage Collection (319) – 2,415 households billed quarterly (VDG/VPC), bi-monthly (VOM) and annually (NCRD), 404 T/yr, serves approx. 2,592 (2021) people [not incl OMVC & SBC]	Electoral Areas D and E and municipalities	NCRD program, operated by contractor
Old Massett Village Council Garbage Collection – 124 T/yr, serves approx. 260 households and 838 (2021) people	Old Massett Village	Band, trucks to Islands Landfill
Skidegate Band Council Garbage Collection – Quantity Unknown [incl in TS tonnage], serves approx. 340 households & 697 (2021) people	Skidegate	Band, trucks to Skidegate transfer station
Masset Transfer Station (315) – 297 T/yr, serves approx. 838 people (2021) [approx. 2,300 in the wider area]	East of Masset	Crown Lease (2005 – 2035) & operated by NCRD staff

Service	Location	Owned & Operated By
Skidegate Transfer Station (315) – 488 T/yr, serves approx. 1,951 people (2021) [VDG, Skidegate, Skidegate Band, Tlell and areas between]	North of Skidegate (Electoral Area D)	NCRD & operated by casual NCRD staff
Sandspit Transfer Station (315) – 107 T/yr, serves approx. 325 people (2021) [EA. E]	South of Sandspit (Electoral Area E)	NCRD leased & operated by contractor
Islands Landfill (317) – 1,560 T/yr, serves approx. 4,582 (2021) people	North of Port Clements	NCRD
Masset Recycling Depot (312) – Quantity Unknown, serves approx. 2,300 people in the wider Masset area (Masset Website)	Masset	Rented & operated by NCRD staff
Daajing Giids Recycling Depot (312) – Quantity Unknown, serves approx. 2,276 people [same as Skidegate + Sandspit TS service population]	Daajing Giids	Rented & operated by casual NCRD staff
Drop-Off Bins – Sandspit (311) – Quantity Unknown, serves approx. 296 (2016) people	Sandspit, Super Value	NCRD
Drop-Off Bins – Tlell (311) – Quantity Unknown, serves approx. 183 (2016) people	Tlell, Fire Hall	NCRD
Joe’s Bottle Depot – Masset – Quantity Unknown, serves same area as TS & Recycling Depot, so approx. 2,300 people (Masset Website)	Masset	Private Owner/Operator
<b>Mainland Service Area</b>		
Prince Rupert Garbage & Recycling Collection – 1,665 T/yr (2020), serves approx. 5,000 dwellings (2021)	Prince Rupert	City of Prince Rupert owned & operated
Port Edwards Garbage Collection – 147 T/yr, serves approx. 196 dwellings (2021)	Port Edwards	Village of Port Edwards owned & operated
NCRD Recycling Depot – 2,171 T/yr (2021), processes material from the entire	Prince Rupert	NCRD



Service	Location	Owned & Operated By
<i>region with population of approx. 18,092 (2021)</i>		
Prince Rupert Bottle Depot – <i>Quantity Unknown, serves approx. 13,510 (2021) people</i>	Prince Rupert	Privately owned & operated
Prince Rupert Landfill – <i>11,334 T/yr (2021), serves approx. 13,510 (2021) people [PR, PE, EAs A/C]</i>	Prince Rupert	City of Prince Rupert owned & operated
Dolphin Island Transfer Station – <i>Quantity Unknown, serves approx. 295 (2021) people</i>	Kitkatla	Gitxaala Nation owned & operated
Lax Kw’alaam Transfer Station – <i>Quantity Unknown, serves approx. 627 (2021) people</i>	Lax Kw’alaams	Lax Kw’alaams Nation owned & operated
Metlakatla Transfer Station – <i>Quantity Unknown, serves approx. 88 (2021) people</i>	Metlakatla	Metlakatla Nation owned & operated
Hartley Bay – <i>Quantity Unknown, serves approx. 140 (2022) people</i>	Hartley Bay	Hartley Bay <i>(Unknown what the service consists of, but waste is shipped to Prince Rupert primarily)</i>

The following table outlines the NCRD 2022 adopted SWM budget including operating and capital expenses and the cost recovery methods and amounts. All services listed in blue font above are included in these budgets. Wages and support services from ISW General have been divided into the individual departments.

### 3.2 Cost Recovery Methods by Service

Costs are recovered through various methods as shown in Table 3-2. The two service area budgets allocate revenue under many different categories including the following:

**Table 3-2: Cost Recovery Methods by Service**

Service	Expenses, Including Capital (2022 Budget)	Cost Recovery Method & Amount (2022 Budget)
<b>Islands Service Area</b>		
ISW General (310) – primarily administration support	\$142,100 (includes \$29,500 transfers to reserves)	Taxation portion: \$41,351 User fees (Island services) portion: \$100,988 Investment income: \$2,500 Penalty for late payment: \$4,400 Spring Cleanup: \$5,500 Discounts: \$-12,450 Transfer from reserves: \$1,000
		<b>Sub-Total: \$143,289</b>
Commercial Recycling (311) – management and processing of material from community bins & dropped off material from businesses at 3 depots	\$152,380	Taxation portion: \$67,830 User fees (Island services) portion: \$47,961 Commercial User Fees: \$12,000 Drop off charges: \$6,000 MARR bulk recycling \$12,600 Recycling Agreements: \$2,500 Sale of materials: \$3,000
		<b>Sub-Total: \$151,891</b>
Residential Recycling (312) – operation of QC, Masset & IL depots incl capital	\$186,131	Taxation portion: \$46,077 User fees (Island services) portion: \$92,249 User Fees (processing): \$18,000 Stewardship Revenue: \$20,700 Recycling Agreements: \$10,000 [\$48,700 in budgeted revenue will not happen in 2022 due to delay in RecycleBC audit]
		<b>Sub-Total: \$187,026</b>
Hauling (313) – MSW on Roll Off Truck from Transfer Stations to Landfill & within Landfill & Landfill Depot recycling to QC Depot incl capital	\$371,705 [includes \$250,000 Haul Truck purchase]	Taxation portion: \$26,915 User fees (Island services) portion: \$72,134 Debt proceeds: \$250,000 [for Haul Truck] Budget shortfall (transfer from reserve): \$22,433
		<b>Sub-Total \$371,482</b>
Transfer Stations (315) – operation of Masset, Skidegate & Sandspit TSs incl capital	\$111,612 [includes \$3,000 transfer to reserve]	Taxation portion: \$35,814 User fees (Island services) portion: \$71,664 Septic Access Fees: \$3,400
		<b>Sub-Total: \$110,878</b>
Islands Landfill (317) – operation of	Operating: \$299,763 Capital (Solar Flare project): \$35,000	Taxation portion: \$79,543 User fees (Island services) portion: \$94,962

Service	Expenses, Including Capital (2022 Budget)	Cost Recovery Method & Amount (2022 Budget)
disposal facility incl capital	Transfer to Reserves: \$48,520 <hr/> \$383,283	Budget shortfall (transfer from reserve) \$40,000 Tipping fees: \$108,630 User Fees (Commercial charges): \$6,000 Gas Tax Grant (for Solar Flare): \$50,000 Investment income: \$3,520
		<b>Sub-Total: \$382,655</b>
Islands Garbage Collection (319) – operation of curbside garbage collection service by contractor for Electoral Areas D & E, VoM, VDG, & VPC	\$207,130/year (contract expires June 1, 2023)	User fees (curbside garbage collection): \$204,303 Budget shortfall (transfer from reserve): \$2,827
		<b>Sub-Total: \$207,130</b>
<b>TOTAL</b>	<b>\$1,554,351</b>	<b>\$1,554,351</b>
<b>Mainland Service Area</b>		
NCRD Recycling Depot – operation (sorting, baling, collection, marketing, shipping) of the regional recycling depot in Prince Rupert incl capital	Operating: \$926,070 (includes \$77,970 transfer to reserve) Capital (roof replacement \$417,060 and renovation \$1,619,120) for total of \$2,036,180	Taxation: \$265,040 Grants-conditional (renovation): \$1,155,770 Grant in lieu of taxes: \$21,470 Sale of services: \$4,290 User fees (processing): \$128,650 Sale of materials: \$115,200 Stewardship revenue: \$144,450 Commercial charges: \$34,480 Rental revenue: \$9,900 Bulk recycling: \$31,200 Agreements: \$29,610 Investment: \$7,100 Transfer from reserves (roof replacement \$22,060, renovation \$463,350 and COVID reserve \$1,000): \$486,410 Transfer from surplus (budget shortfall): \$128,680 Debt proceeds (roof replacement): \$400,000
<b>TOTAL</b>	<b>\$2,962,250</b>	<b>\$2,962,250</b>

The budgets for the individual service areas and sub-services are complex and therefore the definitions of the expenses and revenue categories are important to clarify and understand so that service efficiency and reporting can be accomplished. For this reason, SHA is recommending that the NCRD consider revising the Island and Mainland budgets to show costs and revenues by facility and program, including the allocation of the ISW

General costs to each facility and program with common expenses and revenue categories for each. We realize this is a large task but over a five-year period may be possible.

SHA has put together a listing of the revenue categories for the NCRD’s consideration (available on request) that can be consistent across the departments. Streamlining the categories ensures items such as the variety of fee categories, mean the same for each line item in the budgets. Other suggestions include breaking down each facility further to include all equipment that shows the age, replacement year and cost, will assist in finalizing an asset management plan for the Island services.

Costs for the private and other jurisdiction facilities are not presented in this report but for the purposes of comparing costs this paragraph shows the tipping fees and curbside garbage collection costs for the Island and Prince Rupert services. At the City of Prince Rupert’s Landfill, residents and businesses not from within the boundaries of the City of Prince Rupert pay a tipping fee for regular MSW currently set at \$11.50 for up to six regular garbage bags if the scale is not available, or \$245/tonne with an \$11.00 minimum charge. The tipping fee currently set for regular MSW at the Island Landfill and transfer stations is \$2.00/bag and about \$11.68/tonne (converted from \$7.00 for 1.5 m<sup>3</sup> or \$4.67/m<sup>3</sup> and 0.4 tonnes/m<sup>3</sup> density) as shown in the following table. There is no minimum tipping fee set for using the Island Landfill or Transfer Stations.

Landfill	Minimum Fee for use of the facility	Household Solid Waste Tipping Fee
Island	N/A	\$11.68/tonne
Prince Rupert	\$11.50	\$140.75/tonne (Resident rate)

Recovery of costs through collecting more tipping fees is an option at disposal facilities that have an increasing capital requirement.

Compared to the City of Prince Rupert’s curbside garbage collection program at \$518.04/year per household, the user fee in the Island service area is \$123/year per household and additional MSW service fees (general ISW, recycling, etc.) are an additional \$222/year for a total of \$345/year.

The Prince Rupert Landfill has been upgraded in recent years with lined expansion areas, a leachate treatment system, progressive closure, a stormwater pond and a new septic facility. The Island Landfill has the same regulatory requirements which have been monitored regularly by a qualified professional and has applied Community Works (Gas Tax) funding toward a landfill gas collection and flare system, primarily to work toward applying for and receiving offset credits. The facility does not have an updated Design, Operating and Closure Plan as required in the BC Landfill Criteria for Municipal Waste, 2016 therefore SHA recommends that funding be set aside to update current filling plans,

capital requirements and the landfill lifespan to assist with financial planning. This cost is estimated at \$50,000 and is shown in 2024 in the five-year financial plan.

### 3.3 Costs Per Household

The following table shows the costs per household by service using the rates set by the Islands and Mainland service establishment bylaws, the Island Solid Waste Management Regulation, Fees and Charges bylaw and user agreements (facility use and service agreements). Other revenues are shown combined for sale of service, grants and tipping fees, etc. Of note is the difference between the taxation plus user fees and the remaining costs to recover through the other methods in 2022 (this will vary year to year). Capital and transfer to/from reserves is not included.

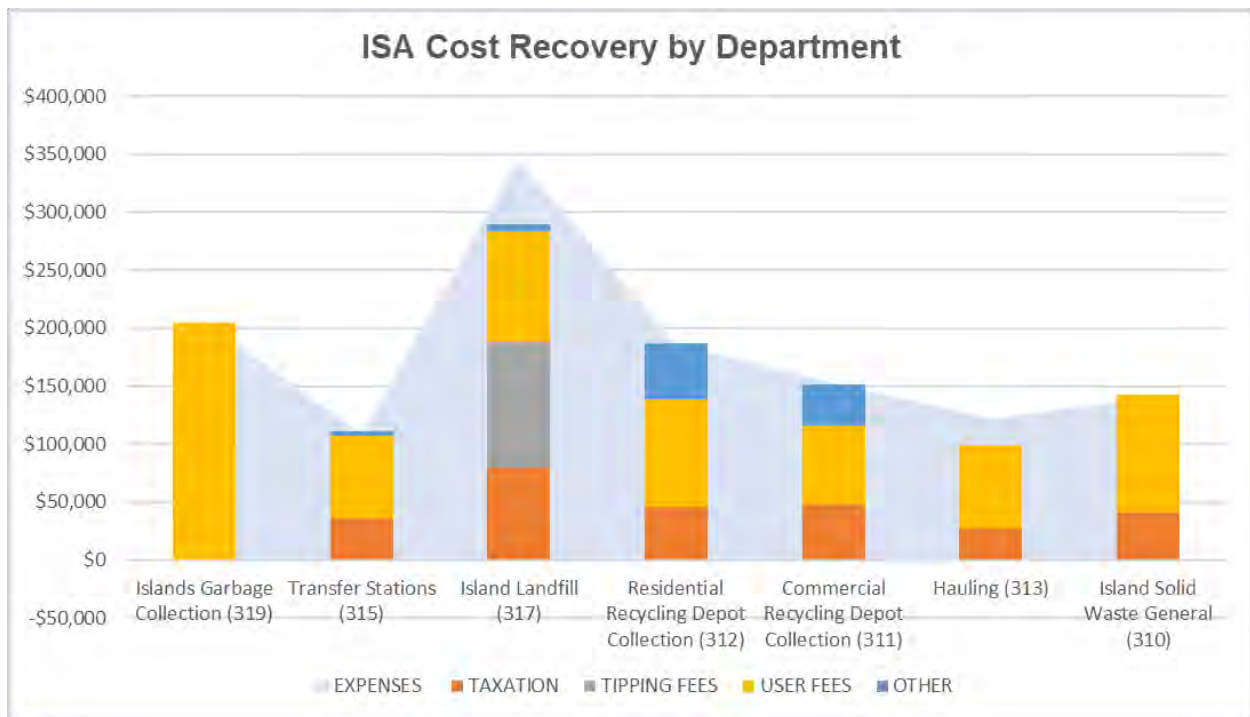
**Table 3-3: User Fees and Cost per Household**

Service (Budget Item)	Expenses (2022 Budget)	[REDACTED] [NK4][NK5][NK6]	[REDACTED] [NK7]	Other Revenue <sup>3</sup>
<b>Islands Service Area</b>				
Taxation 2022: \$0.3189 per 1,000 (Bylaw - \$0.50 per 1,000)				
ISW General (310)	\$139,600	Island services user fees portion: \$100,988 ➤ \$45/year	\$41,351	-\$1,550
Commercial Recycling (311)	\$152,380	Island services user fees portion: \$67,830 ➤ \$30/year	\$47,961	\$36,100
Residential Recycling (312)	\$186,132	Island services user fees portion: \$92,249 ➤ \$41/year	\$46,077	\$48,700
Hauling (313)	\$121,705	Island services user fees portion: \$72,134 ➤ \$32/year	\$26,915	\$0
Transfer Stations (315)	\$108,612	Island services user fees portion: \$71,664 ➤ \$32/year	\$35,814	\$3,400
Islands Landfill (317)	\$344,763	Island services user fees portion: \$94,962 ➤ \$42/year	\$79,543	\$114,630 (\$108,730 Tipping Fees)
Islands Garbage Collection (319)	\$207,130	Islands service user fees portion: \$204,303 ➤ \$123/year	N/A	\$0
<b>Total</b>	<b>\$1,260,322</b>	<b>\$704,130 or \$345/year</b>	<b>\$277,661</b>	<b>\$168,280</b>

Service (Budget Item)	Expenses (2022 Budget)	[NK4][NK5][NK6]	[NK7]	Other Revenue <sup>3</sup>
<b>Mainland Service Area</b>				
Taxation 2022: \$0.0748 per 1000 (Bylaw - \$0.20 per 1,000)				
NCRD Recycling Depot	\$843,970	User fees (processing): \$128,650 Commercial charges: \$34,480 <hr/> \$163,130	\$265,040	\$356,120

1. Number of households used is total households billed for garbage collection and facility use agreements (Skidegate & Old Massett) by the NCRD – 2,261 households in the Island Service Area
2. Based on average home cost of \$147,113 (Masset), \$119,322 (Port Clements), \$246,278 (Daajing Giids), \$250,255 (EA D) & \$152,537 (EA E) on the Islands and \$365,491 (Prince Rupert), \$184,694 (Port Edward), \$99,664 (EA A) & \$99,833 (EA C) on the Mainland
3. Other revenue includes Steward & other agreements, sale of services, investments, tipping fees, sale of materials, loan proceeds, grants and interest

Graphically the above listed costs and revenues are presented below in Figures 2, 3, 4 and 5.



**Figure 2: Island Service Area Cost Recovery**

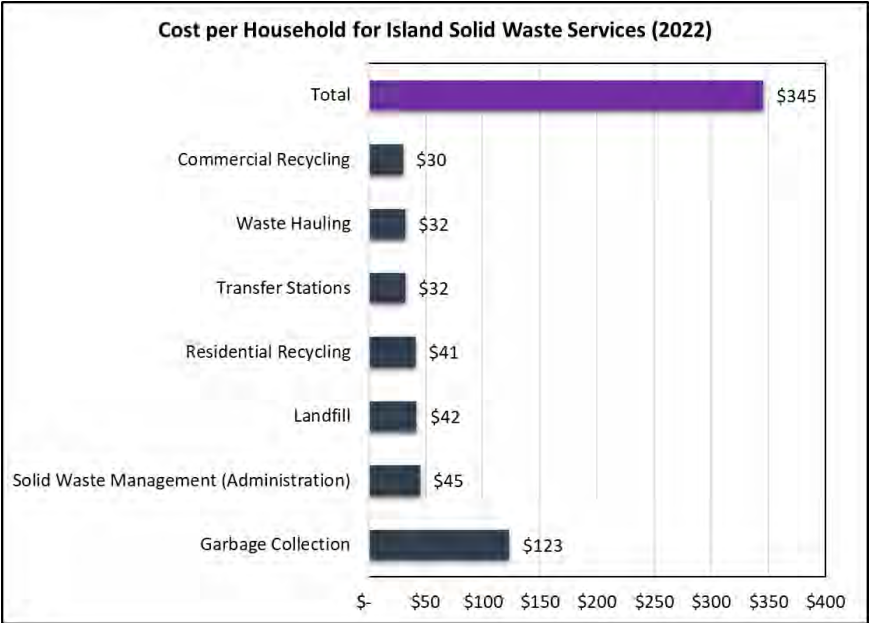


Figure 3: User Fees Cost per Household for Island Service Area

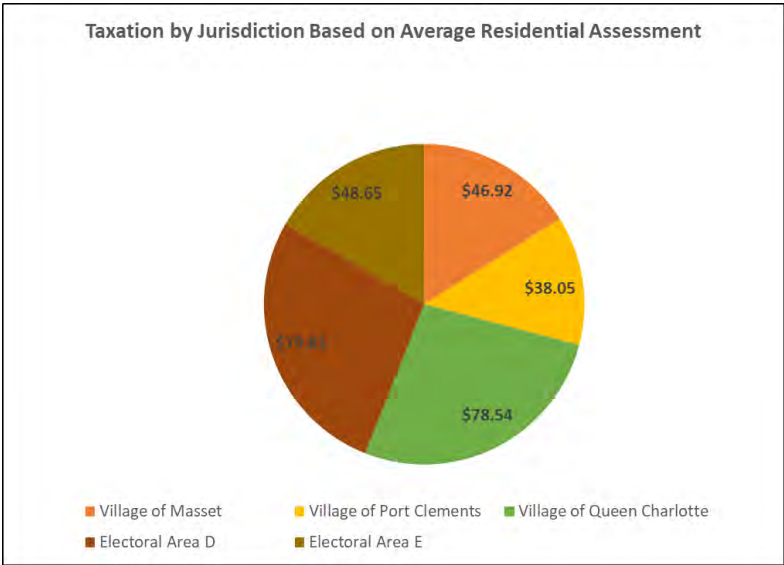
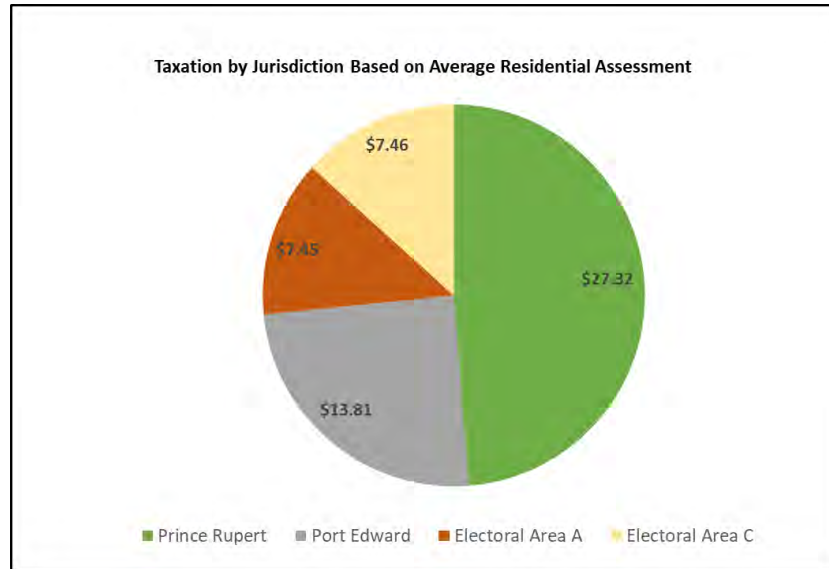


Figure 4: Taxation by Island Jurisdiction and Average Residential Assessment



**Figure 5: Taxation by Mainland Jurisdiction and Average Residential Assessment**

### 3.4 Agreements

The agreements and contracts that provide authority to recover costs and pay contractors have been compiled into a table which is attached in Appendix B providing the entity, service area and a description of the service and fees in detail. The following is the list of agreements outlined in Appendix B:

- Old Massett Village Council – use of Island disposal facilities
- Skidegate Band Council – use of Island disposal facilities
- Big Red Enterprises – garbage collection contract (Island Service Area)
- Gitga'at First Nation – acceptance, processing and transfer of recyclable materials at the NCRD Regional Recycling Depot
- Lax Kw'alaams Band - acceptance, processing and transfer of recyclable materials at the NCRD Regional Recycling Depot
- Metlakatla Governing Council – acceptance, processing and transfer of recyclable materials at the NCRD Regional Recycling Depot
- Village of Masset – collection of user fees on behalf of the NCRD
- Village of Port Clements – collection of user fees on behalf of the NCRD
- Village of Daajing Giids - collection of user fees on behalf of the NCRD
- Recycle BC – Packaging and Printed Paper processing at the NCRD Regional Recycling Depot



- GFL Post Collection Services – Packaging and Printed Paper processing at the NCRD Regional Recycling Depot
- Light Recycle – Authorized collection sites for the BC Lamps and Lighting Equipment Stewardship Program (LightRecycle) operated by Product Care
- MARR – for collection of Major Appliances containing refrigerant and other Major Appliances
- BC ElectroRecycle Program – under CESA and operated by Product Care, for the collection of waste electronic equipment, small appliances or other electrical products (non-bulky items).

These agreements are renewed regularly through negotiations or procurement process allowing opportunities to recover actual costs for services. For example, the Island Service Area curbside garbage collection contract was recently renewed as per the contract terms without negotiation of a fuel surcharge. With the fuel prices escalating in the current economy there are financial risks for the service provider and thus the NCRD.

For the most part, services provided for other jurisdictions and organizations are secured under agreement.

### 3.5 Staffing

Table 3-4 lists the current staffing for the solid waste management services provided by the NCRD. The total compliment of staff for the Islands service area is six (6) full time and three (3) casual and for the Mainland service area six (6) full time, one (1) part time, and one (1) casual including those on leave.

The ratio of staff per facility open hours are as follows:

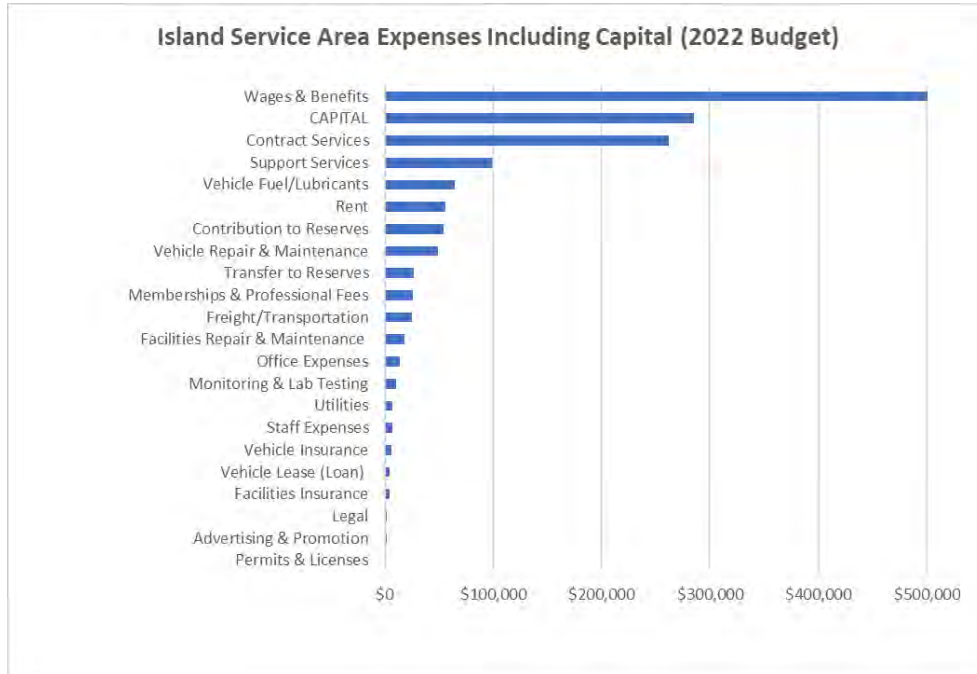
- Island Landfill and Recycling Depot – 3.67
- Sandspit Transfer Station – 1.00 (contractor)
- Skidegate Transfer Station – 1.00
- Masset Transfer Station – 1.00
- Daajing Giids Recycling Depot – 1.28
- Masset Recycling Depot – 1.00
- NCRD Recycling Depot – 5.08

The service area managers cover shifts as necessary for illness or time off.

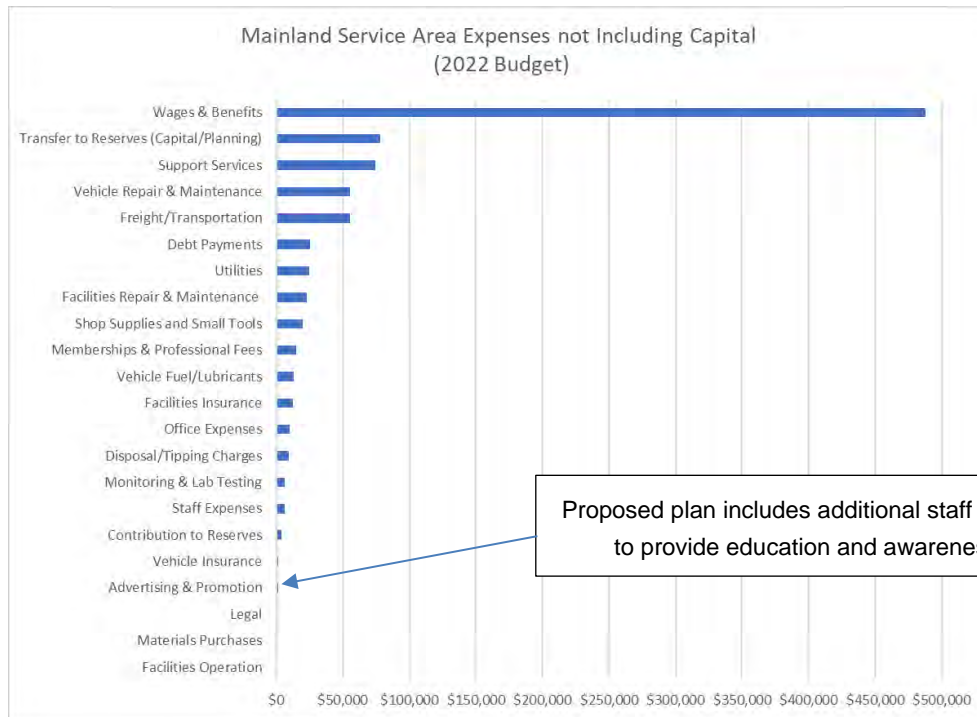
**Table 3-4: Facility Staffing**

Site	Operating Hours & Days	Facility Open Hours per Week	Staffing	Staffing Hrs per week
<b>ISA</b>				
Island Landfill	Open 7 hrs/day, Mon to Sat	42	FT Employees (4 Mon-Fri & 2 Sat)	154
Sandspit TS	Open 2 hrs/day, Tues & Sat	4	Contractor	
Skidegate TS	Open 4 hrs/day, Wed & Sat	8	Casual Employee	8
Masset TS	Open 4 hrs/day, Wed & Sat	8	FT Employee	8
DG Rec Depot	Open 6 hrs/day, Sun-Tues	18	Casual Employee (2)	23
Masset Rec Depot	Open 5.5 hrs/day, Thurs-Sat	16.5	FT Employee (1)	16.5
			<b>Total ISA</b>	<b>209.5</b>
<b>MSA</b>				
NCRD Rec Depot	Open 8 Hrs/day, Mon-Sat	48	FT Employee (4 M; 7 T & W; 6 Th; 6.5 Fri; 2 Sat );	
			Monday - 4 staff	29.5
			Tuesday - 7 staff	52
			Wednesday - 7 staff	52
			Thursday - 6 staff	44.5
			Friday - 6.5 staff	48.25
			Saturday - 2 staff	15
Recycling pickups	Tues-Friday (6 hours/day)	24	1 Recycling Truck Operator (6 hour/day Tuesday - Friday)	
			<b>Total MSA</b>	<b>241.25</b>

As can be seen in Figures 6 and 7, Wages and Benefits are the highest financial component for the solid waste management service.



**Figure 6: 2022 Budget Expenses, Island Service Area**



**Figure 7: 2022 Budget Expenses, Mainland Service Area**

### 3.6 Equipment Replacement

Equipment replacement if planned can avoid surprises in any given budget year. An asset management plan (AMP) was developed for the NCRD Regional Recycling Depot by SHA in 2015 to assist with planning for equipment replacement and budgeting. For both service area facilities, the information gathered from NCRD staff, and the 2015 AMP has assisted with the development of a spreadsheet that provides the type, make and model of the equipment, it's use, the estimated replacement year and the estimated cost for replacement. The full spreadsheet is provided in Appendix C. Table 3-5 provides a section of the full spreadsheet showing the replacements scheduled over the next five years and the costs associated with these replacements. These costs have been included in the five-year financial plan presented in Section 5.

**Table 3-5: Equipment Replacement Timeframe and Costs**

Site	Equipment	Use	Estimated Replacement Year	Estimated Cost
<b>ISA</b>				<b>Five Year Timeframe</b>
	Roll Off Containers for MSW (1)	Public drop off at landfill (garbage)	2025	\$30,000
	Roll Off Containers for MSW (1)	Switch bin on haul truck	2025	\$30,000
	Roll Off Containers for MSW (1)	spare bin	2025	\$30,000
	Roll Off Container for Metal	Metal	2023	\$15,000
	Baler 2 - OCC	Paper/Cardboard	2024	\$30,000
	ISW Pickup	Company truck for staff use	2025	\$105,000
Sandspit TS	Roll Off Containers for MSW (1)	Transfer MSW from TS to IL	2025	\$30,000
Skidegate TS	Roll Off Containers for MSW (1)	Transfer MSW from TS to IL	2025	\$30,000
	Roll Off Containers for MSW (1)	Transfer MSW from TS to IL	2025	\$30,000
Masset TS	Roll Off Containers for MSW (1)	Transfer MSW from TS to IL	2025	\$30,000
	Roll Off Containers for MSW (1)	Transfer MSW from TS to IL	2025	\$30,000
	Roll Off Container for Metal	Transfer Metal from TS to IL	2023	\$25,000
	Roll Off Container for Wood	Transfer Wood from TS to IL	2023	\$25,000
				<b>\$440,000</b>
<b>MSA</b>				
	Baler	OCC, single stream	2025	\$30,000
				<b>\$30,000</b>

### 3.7 Reserves

Table 3-6 lists the current financial reserves indicating the balances as of the end of 2021, the regular annual contribution if any, their purpose, the bylaw that authorizes the reserve and whether or not the reserve is restricted.

**Table 3-6: Reserves for both Service Areas**

Reserve Name	Balance at End 2021	Regular Annual Contribution	Purpose	Bylaw	Restricted	Sufficient
<b>ISA</b>						
ISW General Reserve	\$37,061.63		2022 budget shortfall	569		
ISW Equipment Reserve	\$36,535.14		\$29,698.37 to be used for 2022 budget shortfall	569		
COVID Reserve (Island Service)	\$91,396.85		Must be for COVID impacts		Yes	
ISW Capital and Planning Reserve	\$48,629.82		Must be for capital & planning	643	Yes	
Landfill Capital and Planning Reserve	\$351,828.31	\$72,000	For closure & post-closure costs	643	Yes	
<b>MSA</b>						
Recycling Depot General Reserve	\$152,357.24		\$18,698.80 earmarked for renovation (ICIP grant requirement)	568		
Recycling Depot Equipment Reserve	\$41,604.31		Equipment replacement	568		
COVID Reserve (Mainland Service)	\$73,117.47		Must be for COVID impacts		Yes	
Recycling Depot Building Reserve	\$128,497.82		Set up in 2019 - \$129,652.20 earmarked for renovation (ICIP grant requirement)	568		
Recycling Depot Capital and Planning Reserve	\$297,906.83	\$75,000	\$315,000 earmarked for renovation (ICIP grant requirement); \$22,060 earmarked for roof replacement; \$35,000 earmarked for roof inspection	645	Yes	

SHA recommends that an in-depth reserves analysis be conducted to determine the annual contributions needed for equipment replacements, building renovations, other large capital items and landfill closure and post-closure, such that the final column of Table 3-6 could be completed. As an example, SHA provides a high-level estimate for the Island Landfill closure and post-closure reserve requirements (required under the Environmental Management Act and Landfill Criteria for Municipal Solid Waste, 2016) summarized below.

**Table 3-7: Example of Reserve Sufficiency, Island Landfill Closure/Post-Closure**

Parameter		Comments
Lifespan	2046	2009 Estimate/confirmed in 2020
Years to build reserve	22	2046 – 2024

Parameter		Comments
Geomembrane cover system cost for Phase 6	\$327,000	\$70/m <sup>2</sup>
Post-Closure cost/year	\$17,500/yr	\$1.24/m <sup>2</sup> /year (14,000 m <sup>2</sup> )
Total Post-Closure cost for 50 years	\$868,000	Minimum period without a contaminating lifespan assessment
Current Reserve Balance (2021)	\$352,000	To be used for 2023 Phase 5 Closure
Funding needed by 2046	\$1,195,000	Not including for Phase 5 Closure
Recommended annual contribution after Phase 5 Closure	\$54,400	Not including interest

The above costs and timelines should be further refined as required by the NCRD' financial auditor. SHA recommends a detailed landfill liability spreadsheet be developed to track actual annual costs and revenues and capital program updates.

## 4. STRATEGY OPTION COSTS

The strategies outlined in Technical Memorandums 1 and 2 have been costed in accordance with standard practice and SHA's experience. Table 4-1 presents the costs associated with each strategy which have been allocated to a given implementation year. These costs as well as equipment replacement costs (Table 3-6) are included in the five-year financial plan in Section 5.

### Commercial Recycling Program

SHA has examined the cost of the commercial recycling service the NCRD provides for 1,281 businesses and institutions in the greater Prince Rupert area. The service includes regular (varies with customer) pickup service in customer provided plastic bags of co-mingled office and other paper/fiber at a rate of \$15, \$20 or \$30 per pickup depending on the quantity of material per pickup and this service is conducted with a dedicated van and driver. The driver conducts the service Tuesday to Friday, six hours per day, and diverts approximately 42 tonnes of paper per year. Material is tipped at the NCRD Regional Recycling Depot and baled for shipping to market. This material is not baled with the RecycleBC program fiber at the RRD.

The following table summarizes the cost breakdown and provides an explanation of how the cost information was sourced. Note that the market price for this material is relatively low at this point so no commodity sales revenue has been included.

**Table 4-1: Commercial Recycling Program Costs**<sup>[NK8]</sup>

<b>ANNUAL COST:</b>		
Van replacement	\$ 10,000	Manager recommended \$50,000/10 yr replacement
Operating Costs (insurance/fuel/R&M)	\$ 14,228	Provided by Treasurer
Wage Costs (including benefits)	\$ 40,756	Provided by Manager
Cost for Truck & Driver	\$ 64,984	
Processing Cost (baling, shipping)	\$ 13,843	2021 costs/2019 tonnage @\$329.59/tonne office paper
<b>Total Cost</b>	<b>\$ 78,827</b>	
Collections in 2021	1281	
Average Cost per Collection	\$ 61.54	
Plus 10% - Admin	\$ 67.69	

For discussion purposes, SHA offers the following options to make the program more efficient:

1. Increase pickup fees (this could result in fewer customers wanting to participate)
2. Cancel the program and ask customers to drop off material at the NCRD Regional Recycling Depot instead (this could result in less diversion as convenience would decrease for the customer, and staff would have to be relocated)

3. Promote a private service (depending on their pricing structure and the convenience of the service, customers may not want to participate)
4. Use an alternative funding mechanism (e.g., increase taxation).

Consider engaging the customers on a preferred long-term strategy.

Costs for initiatives R-2, R-4, R-5, R-6, R-8, R-9 and I-1 and 1-2 are included in initiative R-1, Fund a Waste Reduction Coordinator. Filling this position (shared in the financial plan between the two service areas) would help implement many of the strategies listed. The position has been proposed as a full-time permanent position to be filled in 2023.

CRD-1 and RM-3 are listed as being implemented after the five-year SWMP timeframe, however as shown in the five-year financial plan, SHA recommends that management of the problem waste stockpiled at the Island Landfill be funded starting in 2023 by setting up an annually funded reserve. \$20,000 per year is shown in the five-year financial plan.



**Table 4-2: SWMP Strategy Costs and Timeline**

Initiative	Strategy Option	Total Capital Cost (\$)	Total Operating (\$)	Frequency	Year to Implement
A-1	Improve the operational efficiency of the NCRD waste management system				2024
A-2	Continue monitoring solid waste management facilities and services				2023
A-3	Improve service delivery to rural and underserved communities in the Island and Mainland service areas				
A-4	Improve transportation of materials between service areas				2024
A-5	Develop cost recovery models				2024
A-6	Establish a permanent Islands Solid Waste Advisory Committee				2023
A-7	Expand the list of prohibited wastes		\$2,200	per year	2024
A-8	Update Bylaws and Website (Island & Mainland)		\$12,300	once	2023
R-1	Fund a Waste Reduction Coordinator		\$93,693	per year	2023
R-2	Assist users and improve their participation in waste segregation and diversion programs				2023
R-3	Maximize compliance with new and existing stewardship programs	\$22,800			2025
R-4	Optimize recycling efficiencies by increasing diversion rates for residential materials or commercial generators that are below average				2023
R-5	Develop a strategy to reduce single-use items				2023
R-6	Develop a food waste reduction strategy		\$1,500	per year	2026
R-7	Collect household hazardous waste (HHW)	\$200	\$54,000	per year	2026
R-8	Encourage reuse such as thrift stores				2023
R-9	Work with local bicycle retailers for inclusion in the Tire Stewardship BC bicycle tire program				2023

**Table 4-2: Continued**

Initiative	Strategy Option	Total Capital Cost (\$)	Total Operating (\$)	Frequency	Year to Implement
I-1	Encourage initiatives for commercial organics diversion				2023
I-2	Enhance and enforce ICI solid waste source control				2023
I-3	Recover costs of ICI PPP processing				2024
CRD-1	Clean wood waste diversion and re-use		\$43,000	every 5 years	2028
RM-1	Maintenance of Transfer Stations		\$2,600	per year	2023
RM-2	Islands Collection Costs Review				2024
RM-3	Problem Waste Stockpiled at Facilities		\$150,000	every 5 years	2028
			\$45,000	Every 8 years	2028
RM-4	Illegal Dumping Management	\$462			2023

## 5. FIVE YEAR FINANCIAL PLAN

A five-year financial plan for the Solid Waste Management services will help the NCRD plan for future expenditures and revenues until a SWMP review is scheduled. The following two tables outline the 2022 budget and provide the strategy and equipment replacement items in their prospective implementation year shaded in green and yellow, including their resultant net costs for 2023 – 2027. An inflation factor of 4% was used for successive years for all line items that would inflate with the economic situation except for fuel. A 6% inflation rate was used for fuel costs.

As shown in Table 4-1 above, the Commercial Recycling Program has been reviewed with respect to capital and operating costs. The five-year financial plan shows the Commercial Charges item in the MSA not increasing in successive years to recover the costs of this program, however, once this service is reviewed by the PTAC recommendations will be included in the draft SWMP for public and stakeholder consultation.

The PTAC priorities for updating the SWMP are to ensure that the entire system is funded to accomplish the goals of the plan, to focus on improving the operational and financial efficiency of the NCRD waste management systems, and to investigate landfill gas utilization and carbon credits. These priorities will be reviewed with the PTAC during discussion of this Technical Memorandum and the cost recovery options available.

Tables 5-1 and 5-2 show a NET cost for years 2023 to 2027. The revenues have not been adjusted in order to show the costs of the waste diversion strategies, disposal capital requirements and equipment replacements more clearly over the next five years and to provide discussion opportunities with respect to recovering the costs. The line items highlighted green are the strategies and initiatives as listed above in Table 4-2. The yellow highlighted items are capital and equipment replacements required over the next five years as currently contemplated.

**Table 5-1: Mainland Solid Waste Five Year Financial Plan**

ITEM	2022	2023	2024	2025	2026	2027
<b>REVENUE</b>						
Tax Requisition	\$ 265,040	\$ 265,040	\$ 265,040	\$ 265,040	\$ 265,040	\$ 265,040
Grants	\$ 1,177,240	\$ 21,470	\$ 21,470	\$ 21,470	\$ 21,470	\$ 21,470
Sale of Services	\$ 4,290	\$ 4,290	\$ 4,290	\$ 4,290	\$ 4,290	\$ 4,290
Commercial Charges	\$ 34,480	\$ 34,480	\$ 34,480	\$ 34,480	\$ 34,480	\$ 34,480
Processing	\$ 128,650	\$ 128,650	\$ 128,650	\$ 128,650	\$ 128,650	\$ 128,650
Interest/Investment Income	\$ 7,100	\$ 7,100	\$ 7,100	\$ 7,100	\$ 7,100	\$ 7,100
Loan (Debt) Proceeds	\$ 400,000					
Recycling Agreements	\$ 29,610	\$ 29,610	\$ 29,610	\$ 29,610	\$ 29,610	\$ 29,610
Recycled Commodities Revenue	\$ 290,850	\$ 290,850	\$ 290,850	\$ 290,850	\$ 290,850	\$ 290,850
Rental and Lease Income	\$ 9,900	\$ 9,900	\$ 9,900	\$ 9,900	\$ 9,900	\$ 9,900
Transfer from Reserves	\$ 615,090	\$ -	\$ -	\$ 30,000	\$ -	\$ -
<b>TOTAL</b>	<b>\$ 2,962,250</b>	<b>\$ 791,390</b>	<b>\$ 791,390</b>	<b>\$ 821,390</b>	<b>\$ 791,390</b>	<b>\$ 791,390</b>
<b>EXPENDITURES</b>						
Wages & Benefits	\$ 488,070	\$ 554,440	\$ 576,617	\$ 599,682	\$ 623,669	\$ 648,616
R-1 Fund a Waste Reduction Coordinator		\$ 46,847	\$ 48,721	\$ 50,670	\$ 52,697	\$ 54,804
Support Services	\$ 74,660	\$ 82,946	\$ 80,752	\$ 83,982	\$ 87,342	\$ 90,835
A-8 Update Bylaws & Website		\$ 5,300				
Staff Expenses	\$ 6,600	\$ 6,864	\$ 7,139	\$ 7,424	\$ 7,721	\$ 8,030
Memberships & Professional Fees	\$ 15,000	\$ 15,600	\$ 16,224	\$ 16,873	\$ 17,548	\$ 18,250
Office Expenses	\$ 9,920	\$ 10,317	\$ 10,729	\$ 11,159	\$ 11,605	\$ 12,069
Freight/Transportation	\$ 55,300	\$ 57,512	\$ 59,812	\$ 62,205	\$ 64,693	\$ 67,281
Disposal/Tipping Charges	\$ 9,230	\$ 9,599	\$ 9,983	\$ 10,382	\$ 10,798	\$ 11,230
Materials Purchases	\$ 500	\$ 520	\$ 541	\$ 562	\$ 585	\$ 608
Shop Supplies and Small Tools	\$ 19,900	\$ 20,696	\$ 21,524	\$ 22,385	\$ 23,280	\$ 24,211
Facilities Repair & Maintenance	\$ 22,650	\$ 23,556	\$ 24,498	\$ 25,478	\$ 26,497	\$ 27,557
Facilities Operation	\$ -	\$ -	\$ -	\$ -	\$ 54,000	\$ 56,160
R-7 Collect HHW					\$ 54,000	\$ 56,160
Facilities Insurance	\$ 12,540	\$ 13,042	\$ 13,563	\$ 14,106	\$ 14,670	\$ 15,257
Monitoring & Lab Testing	\$ 6,650	\$ 6,916	\$ 7,193	\$ 7,480	\$ 7,780	\$ 8,091
Utilities	\$ 24,720	\$ 25,709	\$ 26,737	\$ 27,807	\$ 28,919	\$ 30,076
Legal	\$ 1,000	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217
Advertising & Promotion	\$ 1,200	\$ 1,248	\$ 2,398	\$ 2,494	\$ 3,344	\$ 3,477
A-7 Expand List of Prohibited Waste			\$ 1,100	\$ 1,144	\$ 1,190	\$ 1,237
R-6 Develop a Food Waste Strategy					\$ 750	\$ 780
Vehicle Insurance	\$ 1,680	\$ 1,747	\$ 1,817	\$ 1,890	\$ 1,965	\$ 2,044
Vehicle Fuel/Lubricants	\$ 13,200	\$ 13,992	\$ 14,832	\$ 15,721	\$ 16,665	\$ 17,665
Vehicle Repair & Maintenance	\$ 55,500	\$ 57,720	\$ 60,029	\$ 62,430	\$ 64,927	\$ 67,524
Debt Payments	\$ 25,650	\$ 25,650	\$ 25,650	\$ 25,650	\$ 25,650	\$ 25,650
Transfer to Reserves (Capital/Planning)	\$ 77,970	\$ 77,970	\$ 77,970	\$ 47,970	\$ 77,970	\$ 77,970
Contribution to Reserves	\$ 4,130	\$ 4,130	\$ 4,130	\$ 4,130	\$ 4,130	\$ 4,130
<b>TOTAL</b>	<b>\$ 926,070</b>	<b>\$ 1,011,214</b>	<b>\$ 1,043,220</b>	<b>\$ 1,050,936</b>	<b>\$ 1,174,927</b>	<b>\$ 1,217,948</b>
<b>NET</b>	<b>\$ 2,036,180</b>	<b>-\$ 219,824</b>	<b>-\$ 251,830</b>	<b>-\$ 229,546</b>	<b>-\$ 383,537</b>	<b>-\$ 426,558</b>
<b>CAPITAL</b>						
Mainland Recycling-Building Renovation	\$ 2,036,180					
R-3 Maximize Stewardship				\$ 80		
R-7 Collect HHW					\$ 200	
RM-4 Illegal Dumping Management		\$ 231				
Baler				\$ 30,000		
<b>TOTAL</b>	<b>\$ 2,036,180</b>	<b>\$ 231</b>	<b>\$ -</b>	<b>\$ 30,080</b>	<b>\$ 200</b>	<b>\$ -</b>
<b>NET</b>	<b>\$ -</b>	<b>-\$ 220,055</b>	<b>-\$ 251,830</b>	<b>-\$ 259,626</b>	<b>-\$ 383,737</b>	<b>-\$ 426,558</b>

**Table 5-2: Island Solid Waste Five Year Financial Plan**

ITEM	2022	2023	2024	2025	2026	2027
<b>REVENUE</b>						
Tipping Fees	\$ 108,630	\$ 108,630	\$ 108,630	\$ 108,630	\$ 108,630	\$ 108,630
User Fees - Collection Services	\$ 704,130	\$ 704,130	\$ 704,130	\$ 704,130	\$ 704,130	\$ 704,130
User Fees - Other	\$ 45,900	\$ 45,900	\$ 51,900	\$ 51,900	\$ 51,900	\$ 51,900
Tax Requisition	\$ 277,660	\$ 287,112	\$ 296,943	\$ 307,166	\$ 317,799	\$ 328,857
Early/Late Payment	-\$ 8,050	-\$ 8,050	-\$ 8,050	-\$ 8,050	-\$ 8,050	-\$ 8,050
Grants	\$ 50,000					
Interest/Investment Income	\$ 6,020	\$ 6,020	\$ 6,020	\$ 6,020	\$ 6,020	\$ 6,020
Sundry Income	\$ 5,500	\$ 5,500	\$ 5,500	\$ 5,500	\$ 5,500	\$ 5,500
Loan Proceeds	\$ 250,000					
Transfer from Reserves	\$ 65,260	\$ -	\$ -	\$ -	\$ -	\$ -
Transfer from COVID Reserve (310)	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
Recycled Commodities Revenue	\$ 48,300	\$ 48,300	\$ 48,300	\$ 48,300	\$ 48,300	\$ 48,300
<b>TOTAL</b>	<b>\$ 1,554,350</b>	<b>\$ 1,198,542</b>	<b>\$ 1,214,373</b>	<b>\$ 1,224,596</b>	<b>\$ 1,235,229</b>	<b>\$ 1,246,287</b>
<b>EXPENDITURES</b>						
Wages & Benefits	\$ 530,790	\$ 598,869	\$ 622,823	\$ 647,736	\$ 673,646	\$ 700,592
R-1 Fund a Waste Reduction Coordinator		\$ 46,847	\$ 48,721	\$ 50,670	\$ 52,697	\$ 54,804
Support Services	\$ 98,450	\$ 109,388	\$ 106,484	\$ 110,743	\$ 115,173	\$ 119,779
A-6 Islands Solid Waste Advisory Committee						
A-8 Update Bylaws & Website		\$ 7,000				
Staff Expenses	\$ 7,000	\$ 7,280	\$ 7,571	\$ 7,874	\$ 8,189	\$ 8,517
Memberships & Professional Fees	\$ 25,510	\$ 10,930	\$ 61,368	\$ 11,000	\$ 11,440	\$ 11,898
Office Expenses	\$ 13,940	\$ 14,498	\$ 15,078	\$ 15,681	\$ 16,308	\$ 16,960
Freight/Transportation	\$ 25,200	\$ 26,208	\$ 27,256	\$ 28,347	\$ 29,480	\$ 30,660
Facilities Repair & Maintenance	\$ 18,250	\$ 18,980	\$ 19,739	\$ 20,529	\$ 21,350	\$ 22,204
Facilities Insurance	\$ 4,390	\$ 4,566	\$ 4,748	\$ 4,938	\$ 5,136	\$ 5,341
Permits & Licenses (315)	\$ 250	\$ 260	\$ 270	\$ 281	\$ 292	\$ 304
Monitoring & Lab Testing	\$ 10,830	\$ 11,263	\$ 11,714	\$ 12,182	\$ 12,670	\$ 13,176
Rent	\$ 56,380	\$ 58,635	\$ 60,981	\$ 63,420	\$ 65,957	\$ 68,595
Utilities	\$ 7,440	\$ 7,738	\$ 8,047	\$ 8,369	\$ 8,704	\$ 9,052
Legal	\$ 2,000	\$ 2,080	\$ 2,163	\$ 2,250	\$ 2,340	\$ 2,433
Advertising & Promotion	\$ 1,500	\$ 1,560	\$ 2,722	\$ 2,831	\$ 3,695	\$ 3,842
A-7 Expand List of Prohibited Waste			\$ 1,100	\$ 1,144	\$ 1,190	\$ 1,237
R-6 Develop a Food Waste Strategy					\$ 750	\$ 780
Vehicle Insurance	\$ 6,500	\$ 6,760	\$ 7,030	\$ 7,312	\$ 7,604	\$ 7,908
Vehicle Fuel/Lubricants	\$ 64,800	\$ 68,688	\$ 72,809	\$ 77,178	\$ 81,809	\$ 86,717
Vehicle Repair & Maintenance	\$ 49,000	\$ 50,960	\$ 52,998	\$ 55,118	\$ 57,323	\$ 59,616
Vehicle Lease (Loan) (313)	\$ 4,560	\$ 26,330	\$ 26,330	\$ 26,330	\$ 26,330	\$ 26,330
Contract Services	\$ 261,530	\$ 266,306	\$ 278,926	\$ 281,279	\$ 283,727	\$ 297,147
CRD-1 Clean Wood Waste Diversion and Re-Use						
RM-1 Maintenance of Transfer Stations		\$ 2,600	\$ 2,600	\$ 2,600	\$ 2,600	\$ 2,600
RM-3 Problem Waste - Auto Hulks						
RM-3 Problem Waste - Crushables						
Transfer to Reserves	\$ 27,000	\$ 27,000	\$ 27,000	\$ 27,000	\$ 27,000	\$ 27,000
Contribution to Reserves	\$ 54,020	\$ 74,020	\$ 74,020	\$ 74,020	\$ 74,020	\$ 74,020
Problem Waste (Auto Hulks, Crushables, Scrap Metal)		\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000
<b>TOTAL</b>	<b>\$ 1,269,340</b>	<b>\$ 1,392,318</b>	<b>\$ 1,490,078</b>	<b>\$ 1,484,418</b>	<b>\$ 1,532,191</b>	<b>\$ 1,592,091</b>
<b>NET</b>	<b>\$ 285,010</b>	<b>-\$ 193,776</b>	<b>-\$ 275,706</b>	<b>-\$ 259,821</b>	<b>-\$ 296,962</b>	<b>-\$ 345,804</b>
<b>CAPITAL</b>						
Hauling (313)	\$ 250,000					
Landfill (317)	\$ 35,000					
R-3 Maximize Stewardship				\$ 22,720		
RM-4 Illegal Dumping Management		\$ 231				
OCC Baller			\$ 30,000			
Phase 5 Island Landfill Closure		\$ 600,000				
Roll Off Containers		\$ 65,000		\$ 240,000		
ISW Pickup				\$ 105,000		
<b>TOTAL</b>	<b>\$ 285,000</b>	<b>\$ 665,231</b>	<b>\$ 30,000</b>	<b>\$ 367,720</b>	<b>\$ -</b>	<b>\$ -</b>
<b>NET</b>	<b>\$ 10</b>	<b>-\$ 859,007</b>	<b>-\$ 305,706</b>	<b>-\$ 627,541</b>	<b>-\$ 296,962</b>	<b>-\$ 345,804</b>

## 6. REFERENCES

City of Prince Rupert Solid Waste Management Amendment Bylaw No. 3465, 2020.

Environmental Reporting BC. 2021. Municipal Solid Waste Disposal in B.C. (1990-2019). State of Environment Reporting, Ministry of Environment and Climate Change Strategy, British Columbia, Canada.

Statistics Canada. 2017. North Coast [Economic region], British Columbia and Canada [Country] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017.

Statistics Canada. 2022. (table). Census Profile. 2021 Census. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released February 9, 2022.  
<https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E> (accessed February 9, 2022).

## 7. 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  $\diamond$  use  $\diamond$  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:** The 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:** The 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

## 8. 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

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**APPENDIX A**  
**1996 Solid Waste Management Plan Initiatives Status**

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

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

<b>Initiative</b>	<b>Topic</b>	<b>Description</b>	<b>NCRD Comments</b>
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.

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

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 recycling 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. <a href="http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping">http://www.princerupert.ca/city_hall/bylaws_policies/illegal_dumping</a> 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 quarterly 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): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 3) Senior Government grants.	Yes. Bylaw provided.
11.1.1	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.
11.1.2	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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11.1.3	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.
11.1.4	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.
11.2.1	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.
12.1.2	Landfill Operation	Operate the landfill site according to the Landfill Plan.	Yes.
12.1.3	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.
12.1.4	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.
12.1.5	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.
12.1.6	Review	Review the data from the Environmental Monitoring program and determine whether amendments are required to Appendix I-2	Yes. Periodically.
12.2.1	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.
12.2.2	Transfer of Sites and Permits	Prior to the final closure plans have been prepared Skidegate and Sandspit Landfills, the Regional District will 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.
12.2.3	Transfer Site Permits	Negotiate with the Ministry of Environment for an amendment of the transfer site permits for the following uses: 1) Transfer sites for temporary storage of municipal waste 2) Septage disposal (Sandspit only) 3) Burning sites for some categories of demolition waste 4) Other demolition wastes that could be used on site as fill or cover material. 5) Temporary storage areas for auto hulks, tires and white goods	Yes.
12.3.1	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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12.3.2	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.
12.3.3	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.
12.3.4	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.
13.1.1	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.
13.1.2	Other Users	Invite BC Parks and the Ministry of Highways participate in the regular collection service for their roadside refuse containers.	
13.1.3	Weekly Service	All collection units enumerated will be provided with a weekly refuse collection service.	Yes. All units accessible by road.
13.1.4	Service Areas	Local refuse collection systems be established for the following service areas (Fig 8): 1) Moresby Island 2) Queen Charlotte City/Skidegate including all areas south of Chinukundl Creek 3) Port Clements/Tlell including all areas south of including Nadu Road to north of Chinukundl Creek 4) Masset/Old Massett including areas north of Nadu Road and Tow Hill Road.	Yes.
13.1.5	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: 1) They provide an alternative compulsory collection service to all their residents; 2) They have the same level of fee surcharges for additional volumes of garbage as stated in the plan; and 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.
13.1.6	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
13.1.7	Collection Contract	Tender each local service area for weekly refuse service.	Yes - agreement provided.
13.1.8	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.
13.1.9	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.

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13.1.10	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.
13.1.11	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 divided to determine a quarterly collection billing fee.	Not currently used as practice for determining rates. Collection rates were increased based on inflationary cost adjustments in 2020. Prior to that, I'm not aware of any rate changes for this fee.
13.1.12	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.
13.1.13	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.
13.1.14	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.
13.2.2	Optional Commercial Collection	Successful bidders for local collection contracts be given the option of having the Regional District collect fees for additional services that: 1) revenue equivalent to the volume (less the regular contract) at the transfer station or landfill will be added to the contract payment; and 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.
14.1.1	Transfer Station Sites	Provide facilities open to the general public during hours in Appendix 4 at the following locations (figure 8): 1) Mas set Transfer Station 2) Port Clements Regional Landfill 3) Skidegate Transfer Station 4) Sandspit Transfer Station	Hours for facilities are as follows: <a href="https://www.ncrdbc.com/services/waste/landfill-transfer-stations">https://www.ncrdbc.com/services/waste/landfill-transfer-stations</a>
14.1.2	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.
14.1.3	Standard Size	The transfer stations shall be designed to accommodate 50 yd <sup>3</sup> roll-off bins.	The NCRD owns the roll off bins.
14.1.4	Maintenance	Maintenance of the transfer stations (as specified in Appendix 1-5) is to be part of the contract awarded for local collection.	

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14.1.5	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.
14.1.6	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.
14.1.7	Sandspit Septage Disposal	The Septage disposal area will continue to be permitted at the Sandspit Transfer Station.	Yes.
14.1.8	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.	
14.1.9	Collection of Fees	The miniatous contractor shall collect fees from the public as specified in Appendix I-3.	Yes.
14.2.1	Use of Fees	Fees collected shall be applied in accordance with Appendix I-3	
14.2.2	Capital Cost	The initial capital costs of the transfer stations be funded by: 1) Provincial Rural Waste Management Grants; 2) Taxation; and 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.
14.2.3	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.
14.2.4	Operating Costs	Operating costs for the Transfer station will be paid from: 1) user charges according to Policy 1-4.2.2; and 2) monthly charges applied to all collection units as in Policy 1-3.1.6.	Yes. Current cost recovery may not be adequate.
14.2.5	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.
15.1.1	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.
15.1.2	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.	
15.1.3	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.
15.2.1	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.	
15.2.2	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.

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16.1.1	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.
16.1.2	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.
16.1.3	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.
16.1.4	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.
16.1.5	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.
16.1.6	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.
16.1.7	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.
16.2.1	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.
17.1.1	Education	The Island Coordinator will organize regular solid waste and recycling waste reduction education programs for schools, local government and other interested groups.	No.
17.1.2	Funding	Apply to BC Environment for funds to assist in support in providing waste reduction education.	No.
18.1	Backyard Composters	Backyard composting will be encouraged and subsidized from time to time with funds provided by the Provincial Government and from the Recycling Reserve.	No.
18.2	Other Composting	ISWAC will encourage initiatives for commercial and backyard composting operations by providing information on composter design and operation.	No.
19.1.1	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.
19.1.2	Problem Waste Coordinator	The Islands Coordinator will facilitate the proper disposal of problem wastes by : a) being conversant with regulations governing the storage and haulage of special waste; and 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.



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19.1.3	General Recycling Support	ISWAC 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.
19.1.4	Recycling Capital Expenditures	ISWAC 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 purchase the needed equipment. <a href="https://www.ncrdbc.com/about-us/news-notice/village-masset-recycling-depot-opening-august-13-2021">https://www.ncrdbc.com/about-us/news-notice/village-masset-recycling-depot-opening-august-13-2021</a>
19.1.5	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.
19.1.6	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 coordinating recycling activities.
19.1.7	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.
110.1.1	Schedules	Implement the plan according to the schedules presented in Fig 9	Yes - for the most part.
110.1.2	Responsibility	Responsibility for implementing various components of the plan will be according to Figure 10	Yes.
110.2.1	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.
110.2.2	Strategies to Prevent Illegal Dumping	ISWAC will review incidents of illegal dumping and recommend the implementation of one or all of the following strategies: 1) publish photos of incidents; 2) identify the owners of the illegally dumped refuse and bill them for the proper disposal; and 3) the adoption of an illegal dumping bylaw with a schedule of fines for various infractions.	Not currently taking place. ISWAC not meeting.
110.2.4	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.
110.3.1	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.
110.3.2	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.

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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: 1 )ISW AC, 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 in ISW service have not arisen during my tenure.
I10.5.1	Funding Sources	Required funds are to be raised from (figure 11): 1) Property taxes ; 2) User charges from: a) Quarterly unit fees b) Volume based tipping fees c) Bag tags; and d) Special handling levies 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.

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**APPENDIX B**  
**Agreements**

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## APPENDIX B: List of Agreements and Rates

Agreements and Rates		
Entity	Service Area	Services
<p>Old Massett Village Council</p> <p>April 1, 2022 to March 31, 2023 Agreement</p>	Islands	<p>Use of the Islands Landfill for residential MSW collected by the First Nation (drop-off and disposal)</p> <ul style="list-style-type: none"> <li>- Provide NCRD with list of dwellings annually (April) – 260 in 2022</li> <li>- Annual user fee: monthly pick-up rate as per Bylaw 276 as amended reduced by \$6.50/mo/dwelling [2022 = \$21.50/mo/dwelling x 12 months]</li> <li>- Contribution to landfill operations: \$100/dwelling/year (2022)</li> </ul>
<p>Skidegate Band Council</p> <p>April 1, 2022 to March 31, 2023 Agreement</p>	Islands	<p>Use of Skidegate Transfer Station for residential MSW collected by the First Nation (drop-off and disposal)</p> <ul style="list-style-type: none"> <li>- Provide NCRD with list of dwellings annually (April) – 340 in 2022</li> <li>- Annual user fee: monthly pick-up rate as per Bylaw 276 as amended reduced by \$3.50/mo/dwelling [2022 = \$24.50/mo/dwelling x 12 months]</li> <li>- Contribution to landfill operations: \$100/dwelling/year (2022)</li> </ul> <p>Use of Skidegate Septage Lagoons</p> <ul style="list-style-type: none"> <li>- Contribution to septic pit remediation \$2,000 annually</li> </ul>
<p>Big Red Enterprises</p> <p>July 2, 2019 – June 30, 2022; extended , for one year to June 20, 2023</p>	Islands	<p>Collection of MSW from residential dwellings, apartments and customers in the Islands Waste Management Area including:</p> <ul style="list-style-type: none"> <li>- Moresby Island</li> <li>- Queen Charlotte City and Skidegate Landing</li> <li>- Chinukundl Creek to Tlell, Port Clements to Nadu Road</li> <li>- Village of Masset and Graham Island North/Towhill Road, South of Masset to Pure Lake</li> </ul> <p>Scope of Work:</p> <ul style="list-style-type: none"> <li>- Collect MSW from residential dwellings</li> <li>- 2 regulation garbage receptacles weekly (excess must have a prepaid 'bag tag' affixed to the bag)</li> <li>- Report violations of sanitary laws to the Manager</li> <li>- Clean up garbage spilled during operation</li> <li>- Answer all complaints courteously and promptly</li> </ul>

**Agreements and Rates**

Entity	Service Area	Services
		<ul style="list-style-type: none"> <li>- Inform Manager of additions and deletions to customer list</li> <li>- Do not trespass and interfere with traffic needlessly</li> <li>- Provide good and workable vehicles that are cleaned, washed and disinfected regularly</li> <li>- Complete monthly statistical reports detailing the volume hauled and supply a list of customers invoiced</li> <li>- Invoice the NCRD monthly for a sum equal to the product of customer unit price times the number of units</li> <li>- The NCRD will make available 'bag tags' which may be purchased for \$105.00 per 100 tags that the contractor may sell to customers and service groups for \$2/tag</li> <li>- "Checklist" tags will be provided at no charge for placement on rejected garbage</li> </ul> <p>Fees:</p> <ul style="list-style-type: none"> <li>- For the term of the contract, the NCRD agrees to pay the Contractor a sum not exceeding \$621,396 including all disbursements</li> <li>- Effective July 1, 2019 the rate per unit is \$10.25 (May 2022 the number of units was 1,684)</li> </ul>
<p>Gitga'at First Nation  (Hartley Bay)  July 1, 2021 – June 30, 2024</p>	Mainland	<p>Recycling services, including the acceptance, processing and transfer of recyclable materials to the NCRD Regional Recycling Depot</p> <ul style="list-style-type: none"> <li>- The Band shall pay a sum of \$800 per recycling container as a processing and handling fee for services and invoiced by NCRD</li> <li>- Material must be sorted by cardboard/boxboard; mixed paper/magazines; newsprint; tin/aluminum; type 2 coloured plastic and milk jugs; mixed plastics #1 - #7 incl clam shells and plastic bags together</li> <li>- Provide notice prior to delivery to the facility</li> <li>- Remove the container within 72 hours after delivery</li> <li>- The Band is responsible for all deliver and removal costs</li> <li>- \$150/tonne will be charged for unsorted material</li> <li>- The Band will be charged for disposal of contaminated material</li> <li>- The Band is responsible for providing Megabags, pallets and containers</li> </ul>
Lax Kw'alaams Band	Mainland	Recycling Services including the acceptance, process and transfer of recyclable material at the NCRD

**Agreements and Rates**

Entity	Service Area	Services
<p>April 14, 2016 – termination (year to year)</p>		<p>Regional Recycling Depot from the Lax Kw'alaams recycling facility (at R 1)</p> <ul style="list-style-type: none"> <li>- The agreement shall remain in force together with updates and amendments until terminated by either Party with 1 year written notice</li> <li>- Service rates shall be reviewed and amended as required every 2 years</li> <li>- The recycling service rate is \$250/tonne for recyclable materials transferred from Lax Kw'alaams</li> <li>- The NCRD will invoice the Band semi-annually</li> <li>- Advise the NCRD of any planned expansion of the recycling service on reserves</li> <li>- 48 hours notice must be given via email for material delivery</li> <li>- Materials are to be sorted by: comingled printed paper, cardboard and poly containers; comingled plastic packaging containers; metal packaging</li> </ul>
<p>Metlakatla Governing Council</p> <p>April 1, 2013 – to termination (year to year)</p>	<p>Mainland</p>	<p>Recycling services, including the acceptance, processing and transfer of recyclable materials to the NCRD Regional Recycling Depot</p> <ul style="list-style-type: none"> <li>- 30 days written notice required for amendments and termination</li> <li>- The Band shall pay a sum of \$600 per recycling container as a processing and handling fee for services and invoiced by NCRD</li> <li>- Material must be sorted by cardboard/boxboard; mixed paper/magazines; newsprint; tin/aluminum; type 2 coloured plastic and milk jugs; mixed plastics #1 - #7 incl clam shells and plastic bags together</li> <li>- Provide notice prior to delivery to the facility</li> <li>- Remove the container within 72 hours after delivery</li> <li>- The Band is responsible for all deliver and removal costs</li> <li>- \$150/tonne will be charged for unsorted material</li> <li>- The Band will be charged for disposal of contaminated material</li> </ul> <p>The Band is responsible for providing Megabags, pallets and containers</p>
<p>Village of Masset</p> <p>January 31, 2022 – December 31, 2022</p>	<p>Islands</p>	<p>Collect User Fees on behalf of the NCRD from property owners within the Village of Masset (VOM) for solid waste services provided by the NCRD</p> <ul style="list-style-type: none"> <li>- Collection Handling Charge paid by NCRD to VOM - \$1.52/customer/month</li> <li>- Receive customer inquiries and handle complaints</li> </ul>

**Agreements and Rates**

Entity	Service Area	Services
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		<ul style="list-style-type: none"> <li>- Bi-monthly accounting of customers and remittance to NCRD</li> </ul>
<p>Village of Port Clements</p> <p>January 31, 2022– December 31, 2022</p>	Islands	<p>Collect User Fees on behalf of the NCRD from property owners within the Village of Port Clements (VPC) for solid waste services provided by the NCRD</p> <ul style="list-style-type: none"> <li>- Collection Handling Charge paid by NCRD to VPC - \$1.52/customer/month</li> <li>- Receive customer inquiries and handle complaints</li> <li>- Quarterly accounting of customers and remittance to NCRD</li> </ul>
<p>Village of Daajing Giids</p> <p>January 31, 2022– December 31, 2022</p>	Islands	<p>Collect User Fees on behalf of the NCRD from property owners within the Village of Daajing Giids (VDG) for solid waste services provided by the NCRD</p> <ul style="list-style-type: none"> <li>- Collection Handling Charge paid by NCRD to VDG - \$1.52/customer/month</li> <li>- Receive customer inquiries and handle complaints</li> <li>- Quarterly accounting of customers and remittance to NCRD</li> </ul>
<p>Recycle BC</p> <p>Master Service Agreement including Statements of Work for the 'Mainland Regional Recycling Depot'</p> <p>Nov 30, 2013 - December 31, 2023 (plus 2 further 1 year periods with 30 days written notice by RBC)</p> <p>Change Order-Feb 1/22</p>	Mainland	<p>Scope of Work for NCRD Principal Depot to process Household In-Scope PPP for Recycle BC</p> <ul style="list-style-type: none"> <li>- Not entitled to fees for ICI material</li> <li>- NCRD must not charge customers for the material</li> <li>- Scavenging is forbidden</li> <li>- NCRD responsible for all risk</li> <li>- NCRD can collect other material as long as it does not interfere with RBC collection and there is no mixing</li> <li>- No exclusive access to customers in proximity to the depots</li> <li>- Deposit beverage containers comingled are deemed to be In-Scope PPP</li> <li>- Service level failures include lack of spillage cleanup outside depot, greater than 3% by weight of Not Accepted Materials in a load, or delivery of In-Scope PPP to any other facility or person than the designated Post-Collection Service Provider (including disposal site) without written authorization</li> </ul> <p>CO-Feb 1/22: for Depot Collection in a Community with PPP Curbside/Multi-Family Collection and Additional Incentive if Baled (\$/per tonne)</p> <ul style="list-style-type: none"> <li>- Cat. 1,2,3b [paper/cardboard] - \$60 (+\$110 if baled)</li> <li>- Cat. 3a,6,7 [containers] - \$90 (+\$110 if baled)</li> <li>- Cat. 4 [overwrap/bags] - \$1,250 (+\$660 if baled)</li> </ul>

**Agreements and Rates**

Entity	Service Area	Services
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		<ul style="list-style-type: none"> <li>- Cat. 5 [foam pckging] - \$2,000</li> <li>- Cat. 8 [glass bottles/jars] - \$90</li> <li>- Cat. 9 [flexible plastic] - \$1,250 (+\$660 if baled)</li> </ul> <p>Education Top Up: 4,315 x \$0.75/Depot Only Household/Yr</p>
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<p>GFL – Post Collection Services</p> <p>NCRD Recycling Depot</p> <p>Statement of Work, January 30, 2020</p> <p>Agreement September 1, 2021 –August 31, 2025</p>	<p>Mainland</p>	<p>NCRD as Subcontractor, for GFL Scope of Work for Recycle BC materials:</p> <ul style="list-style-type: none"> <li>- Receive inbound PPP</li> <li>- Weigh inbound PPP and upload data daily</li> <li>- Process/bale inbound PPP</li> <li>- Store baled inbound PPP</li> <li>- Load baled material into transport carriers as directed by GFL North Vancouver incl bill of lading &amp; manifest</li> <li>- Enter all necessary inbound, transfer and/or outbound data into AMCS as required (daily, weekly and monthly reporting)</li> <li>- Ensure all material audits as set by Recycle BC for the new stream of material area taken as required</li> </ul> <p>Other materials:</p> <ul style="list-style-type: none"> <li>- Receive, weigh, process/bale, store and load all PPP from all depots and other communities within the NCRD, including the Kitimat Bottle Depot and any other depots and/or communities which may be appointed by Recycle BC at any time over the course of the contract</li> </ul> <p>Bale single stream (Cat 1,2,3a,3b,6,7) - \$180 per tonne</p>
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<p>Light Recycle (Product Care)</p> <p>September 6, 2012 – renewed annually until termination by either party</p>	<p>NCRD</p>	<p>Authorized collector for the BC Lamps and Lighting Equipment Stewardship Program (LightRecycle) operated by Product Care (PCA) for end of life lamps (lights and bulbs)</p> <ul style="list-style-type: none"> <li>- PCA to provide collection containers, signage and spill kit, media communications and provide transportation services</li> <li>- NCRD to provide collection services as per the Collection Guidelines: ensure staff is trained; accept lamps at no charge; fill containers to their maximum</li> <li>- 30 days written notice prior to annual renewal date required for termination of agreement</li> <li>- PCA shall provide 120 days written notice of change in rates</li> </ul> <p>Fees:</p>
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Agreements and Rates		
Entity	Service Area	Services
		<ul style="list-style-type: none"> <li>- Fluorescent Tubes - \$0.03/linear foot</li> <li>- CFL, LED, Incandescent and Halogen Lamps - \$0.05/unit</li> <li>- HID and Other - \$0.10/unit</li> <li>- Monthly payment in accordance with records of shipments</li> </ul>
MARR	NCRD	For collection of Major Appliances containing refrigerant and Other Major Appliances (White Goods)
<p>B.C. ElectroRecycle Program under the Canadian Electrical Stewardship Association (CESA)</p> <p>By Program Manager: Product Care Association (PCA)</p> <p>Term??</p>	NCRD	<p>Authorized collector for collection of waste electronic equipment, small appliances or other electrical products (non-bulky items)</p> <ul style="list-style-type: none"> <li>- Agreement automatically renewed annually after initial 36 months unless terminated by either party with 90 days written notice prior to the current term</li> <li>- Non-exclusive (other collectors can be appointed)</li> <li>- Act in accordance with the Program Operational Manual and the Regulations: not charge a fee; not knowingly collect non-program products; not scavenge; store and prepare materials using the Collection Supplies for pick-up by transporter and provide reasonable notice to transporter</li> <li>- Provide notice for facility changes</li> <li>- Ensure all employees are trained and all incidents promptly reported</li> </ul> <p>Fees:</p> <ul style="list-style-type: none"> <li>- 2022 - \$245/tonne</li> <li>- Geography multiplier – 1.2</li> <li>- De Minimis Benefit</li> <li>- Annual fee review</li> </ul>

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**APPENDIX C**  
**Equipment Replacement**

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## NCRD 2022 Equipment Inventory and Replacement Schedule

Site	Equipment	Make/Model	Use	Estimated Replacement Year	Comments	Estimated Cost
<b>ISA</b>						<b>Five Year Timeframe</b>
Island Landfill (including recycling depot)	Roll Off Truck	Mack, 2013	Hauls bins from TSs to IL, all bins at IL RDO to tipping face/stockpiles and consolidated recyclables from IL to QC Rec Depot for shipping to Mainland (backhauls Skidegate TS bins to IL)	2022	Bandstra contracted to haul consolidated recyclables from QC Rec Depot to NCRD Rec Depot in Prince Rupert. Provide depot with a trailer that depot operator loads.  Life expectancy of the truck: 5 years (due to salt/wear and tear on truck body) - new truck ordered for 2022 (budgeted \$250,000)  288,542 km at June 2022	In 2022 budget
	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall (bin unfit for highway)	Public drop off at landfill (garbage)	2025	8 total 48.8 cubic yard bins [Purchased at various times]	\$30,000
	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall	Switch bin on haul truck	2025		\$30,000
	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall	spare bin	2025		\$30,000
	Roll Off Container for Metal	20 cubic yard (unfit for highway use)	Metal	2023	Metal (Purchased 1999/2000)	\$15,000
	Baler - Plastic Bags	Marathon V-3620	Bales plastic bags	2041	Purchased in 2021	
	Baler 2 - OCC	2-HY-PAC horizontal	Paper/Cardboard	2024	Purchased early 1990s (when we first started recycling)	\$30,000
	Baler - Mixed Paper	Owatoona 26"	Bales Mixed Paper	2034	Purchased from Super Valu 2019	
	Recycle Truck (cube van)	Ford Econoline (2017)	Hauls recyclables bulk from Masset Rec Depot to IL	2032	Life expectancy - 805,000 km [purchased in 2020 - 79028 in June 2022]	
	ISW Pickup	Chev 2500 (2010)	Company truck for staff use	2025	Life expectancy - 320,000 km [purchased in 2018 - 97000 km in June 2022]	\$105,000
	Excavator	Caterpillar 320D (2008)	Compaction and construction at the IL	2034	Life expectancy - 20,000 hours (approximately 4300 hours)	
	Farm Tractor	Kubota L3400DT (2008)	Moving materials in yard, road repairs, plowing, etc	2036	Purchased 2017 (approximately 1500 hours)	
Sandspit TS	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall	Transfer MSW from TS to IL	2025	Haida Gwaii Ties contractor service 4 hrs per week	\$30,000
Skidegate TS	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall	Transfer MSW from TS to IL	2025		\$30,000
	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall	Transfer MSW from TS to IL	2025		\$30,000
Masset TS	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall	Transfer MSW from TS to IL	2025		\$30,000
	Roll Off Containers for MSW (1)	48.8 cubic yard, lidded, Stand Wall	Transfer MSW from TS to IL	2025		\$30,000
	Roll Off Container for Metal	30 cubic yard bin	Transfer Metal from TS to IL	2023	Metal (Purchased 1999/2000)	\$25,000
	Roll Off Container for Wood	30 cubic yard bin	Transfer Wood from TS to IL	2023	Wood (Purchased 1999/2000)	\$25,000
Masset Rec Depot (MRC)	Baler - OCC	R-M 30HD 30" Harmony	Bales OCC	2035	Purchased 2017	
	Baler, Vertical - Plastic	Harris V5HD 480V, 3 Phase (2017)	Bales Plastic	2031	Purchased in 2021	
	Forklift	Yale (1986)	Loads bales, etc	2029	Life expectancy 8,000 - 20,000 hours (purchased in 2014 from Tickers) - meter doesn't work	
Daajing Giids Rec Depot (DGRC)	Baler, Vertical - OCC		Bales OCC		Belongs to Tickers' facility	
	Baler - Plastic	Harmony MH30HD	Bales plastics	2029	Plastic containers only (Purchased before 2009)	
	Forklift	Doosan (2014)	Loads bales, etc	2029	Life expectancy 8,000 - 20,000 hours (approximately 10000 hours - meter is not working)	
Tiell & Sandspit Supervalu Community Drop-Off	Recycling Collection Bins	4 bay stationary containers (2)	Collects paper, plastic bags, cardboard and containers	2028	Year?	
<b>TOTAL</b>						<b>\$440,000</b>
<b>MSA</b>						
NCRD Rec Depot	Cube Van	Sierra (2013)	Conducts commercial recycling pickups	2028	Purchased in 2015 (87,027 km as at June 2022)	
	Glass Crusher	DS Glass Crusher	Crushes glass jars, bottles & refundables	2030	Purchased in 2002	
	Vertical Balers	Maren	Plastic film	2028	Purchased in 1994/1995 (used)	
	Vertical Baler	Harmony 10-60	Encorp processing alum & plastic	2032	Purchased in 1998	
	Baler	Gemini, Extreme (2012)	OCC, single stream	2025	Purchased in 1999	\$30,000
	Forklift 1	Toyota 8FGU25 (2018)	Loads bales, etc	2030	life expectancy - 20,000 hours [4,605 hours as at June 2022]	
	Forklift 2	Toyota 8FGU25 (2021)	Loads bales, etc	2033	life expectancy - 20,000 hours (329 hours as at June 2022)	
	Vertical Baler	Maren	Flexible Packaging	2028	Purchased in 1994/1995 (used)	
	Vertical Baler	Maren	Commerical Plastic film	2028	Purchased in 1994/1995 (used)	
	Vertical Baler	Maren	Commerical Plastic	2028	Purchased in 1994/1995 (used)	
	Vertical Baler	Maren	Spare baler	2028	Purchased in 1994/1995 (used)	
	Weigh scale			2036	Installed in 2021	
<b>TOTAL</b>						<b>\$30,000</b>

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**APPENDIX F**  
**Technical Memorandum No. 4, Services Review**

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# SOLID WASTE MANAGEMENT PLAN UPDATE



## SERVICES REVIEW

**Technical Memorandum No. 4:**

### **SOLID WASTE MANAGEMENT SERVICES REVIEW**

**May 3, 2023**

**Prepared by: Sperling Hansen Associates**

Revisions:

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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 municipal solid waste (MSW) collection, disposal, reduction and recycling 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 the many initiatives outlined therein have for the most part been implemented.

Sperling Hansen Associates (SHA) was hired in November 2021 to assist with the SWMP update to its final submission to the ENV in 2023. This Technical Memorandum (TM) is part of Task 3 (Develop and Finalize Strategies) as outlined in SHA's project proposal and Change Order #01. It aligns with Step 2 and Step 3 of the Province's 2016 Guide to Solid Waste Management Planning (Guide) and will be presented to the NCRD's Public and Technical Advisory Committee (PTAC) for review and discussion.

This TM provides background information on existing services and facilities and looks at how they may be consolidated and centralized to build efficiencies, reduce costs, and simplify management. The service change options provided herein are for discussion purposes at this stage to offer optional alternatives that could be considered to improve the economic viability, sustainability of the services, and potentially improve user convenience such as curbside collection versus drop off. For any changes to services that might reduce convenience, SHA has looked at options that the NCRD might implement to improve an existing service, minimize stakeholder push-back and minimize new costs.

## 2. CONTEXT AND SCOPE

This fourth TM provides the following:

- The outcomes of a study of consolidating and adding additional solid waste management (SWM) services on Haida Gwaii
- The outcomes of a study of cancelling the commercial recycling pick-up service in the Mainland and Island Service Areas
- The outcome of a study of septage and holding tank waste management at the Skidegate Transfer Station
- The process for considering transfer of ownership of the Prince Rupert Landfill to the NCRD.

Upon review of the Draft SWMP through public and internal staff consultations, a number of revisions and additions to the engagement strategies were recommended for consideration and inclusion in the second Draft of the SWMP (Draft 2). Upon revision, Draft 2 will be presented to the PTAC and then to the NCRD Board of Directors for approval before being released for round two of the stakeholder engagement and consultation process. Consequently, added to this TM is a revised version of the Public Consultation and Engagement Plan (Appendix A).

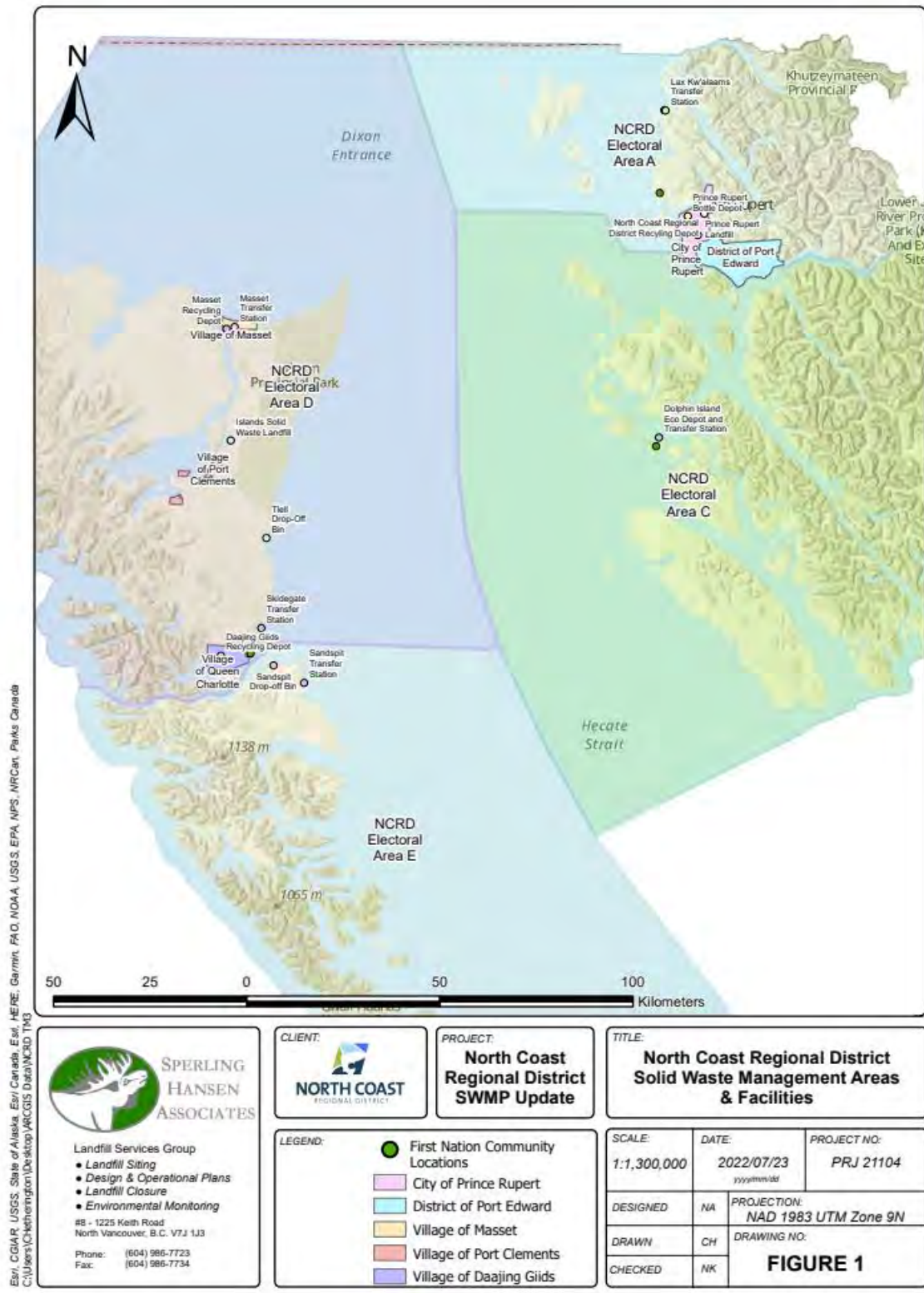
### 2.1 Guiding Principles for Waste Disposal

As reviewed in previous TMs, the Province's Guide to Solid Waste Management Planning (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 topics relating to this TM were put forward by the NCRD PTAC early in the process:

1. Ensure that possible negative reactions to some plan policies are addressed during implementation.
2. Ensure that the public and system users are participants in any modifications to this plan.
3. Provide a framework to resolve disputes arising from implementation of the plan.
4. Ensure that the entire system is funded to accomplish the goals of this plan.
5. Focus the SWMP on the following:
  - a) Improving the operational and financial efficiency of the NCRD waste management systems.

The above list is not exhaustive and can be modified prior to development of Draft 2 and presentation to stakeholders during consultation.

Figure 1 shows the division of the NCRD into Electoral Areas A and C (Mainland Service Area), D and E (Islands Service Area), the facilities as they are dispersed in the region and the distances between transfer stations and disposal and processing facilities (e.g., Islands Landfill and the NCRD Recycling Depot).



**Figure 2-1: NCRD Solid Waste Disposal System Overview**

## 2.2 Solid Waste Management Services and Provider

The programs and facilities listed in the table below show the services that are the subject of this review.

**Table 2-1: SWM Services and Provider**

Service	Location	Owned & Operated By
<b>Islands Service Area</b>		
Islands Garbage Collection	Electoral Areas D and E and municipalities	NCRD program, operated by contractor
Commercial Cardboard Collection	Island ICI sector	NCRD program, operated by NCRD staff
Masset Transfer Station	East of Masset	Crown Lease (2005 – 2035) & operated by NCRD staff
Skidegate Transfer Station	North of Skidegate (Electoral Area D)	NCRD leased & operated by casual NCRD staff
Sandspit Transfer Station	South of Sandspit (Electoral Area E)	NCRD leased & operated by contractor
Masset Recycling Depot	Masset	<u>Rented</u> & operated by NCRD staff
Daajing Giids Recycling Depot	Daajing Giids	<u>Rented</u> & operated by casual NCRD staff
Drop-Off Bins – Sandspit	Sandspit, Super Value	NCRD program, operated by NCRD staff
Drop-Off Bins – Tlell	Tlell, Fire Hall	NCRD program, operated by NCRD staff
<b>Mainland Service Area</b>		
Prince Rupert Landfill	Prince Rupert	City of Prince Rupert owned & operated
NCRD Regional Recycling Depot	Prince Rupert	Owned & operated by NCRD

## 3. TRANSFER STATIONS UNDER REVIEW

The waste transfer facilities and services provided by the NCRD that are the subject of this TM are described in this section, including the reason for their inclusion in the study.

### 3.1 Masset Transfer Station

The Masset Transfer Station (MTS), located on Towhill Road in the Industrial Park about 2 km east of Masset across from the Airport entrance, serves residents of the greater Masset area and is open two days per week: Wednesday 1:00 pm to 5:00 pm and

Saturday 11:00 am to 3:00 pm (8 hours/week). The Transfer Station serves Old Massett Village (Masset Indian Reserve No. 1) administered by the Old Massett Village Council (OMVC), that lies on the east side of Massett Sound with a 2021 population of about 475, (, the Village of Massett administered by Massett Village Council, with a 2021 population of 838, along with residents and businesses at the north end of Electoral Area D with a population of approximately 300. As reported for the 2021 Census, the number of dwellings served is approximately 241 in Old Massett, 518 in Village of Massett, and 195 in Electoral Area D, north.



As seen in the photo to the left, there are two bays for, 30 cubic yard roll off containers with lids at the site and safety railings to reduce risk for users. There are also two other bins on site as open stockpiling is not allowed due to the proximity of the MTS to the airport. The site is attended by an NCRD employee for four hours on Wednesday and four hours on Saturday. For this site, the operator, who also hauls the bins to the Islands Landfill, works on average 14 hours per week. The operator uses their vehicle for

protection from the weather as there is no gate house.

Waste deposited in the roll-off containers is transferred as-needed to the Islands Landfill north of Port Clements, about 32 km, or 25 minutes one way. This amounts to 15 to 20 m<sup>3</sup> per week, or approximately 900 m<sup>3</sup> per year. At an uncompacted density of 0.5 tonnes per m<sup>3</sup>, this equates to approximately 450 tonnes/year.

MSW is also self-hauled by residents and commercial waste haulers from the greater Massett area to the Islands Landfill. Contract haulers no longer use this Transfer Station. The Old Massett Village provides a curbside collection service for garbage in their community and the NCRD provides a curbside collection service for garbage in the Village of Massett and Area D (Graham Island North/Towhill Road and south of Massett to Pure Lake) and haul this material direct to the Islands Landfill.

Metal and wood are collected at the MTS in roll off bins and hauled to the Islands Landfill about once per month. The quantity is unknown. Tires and major appliances are added to these bins and sorted at the Islands Landfill. The older bins are coming to the end of their life and according to NCRD staff replacement is about \$25,000/bin, FOB Haida Gwaii.

Illegal dumping along the access road is not an issue, however since there is no fence around the site, scavenging occurs regularly with materials strewn through the treed area around the site. This is cleaned up several times per year. Along the same access road, the Village of Masset has a stump dump where yard clean-up wood is stockpiled. No dimensional wood is allowed. According to NCRD staff a fence to secure the site will cost in the order of \$75,000.

The cost to operate the MTS in 2022 was \$66,535 and the revenue was \$12,431. The cost breakdown is shown below in Table 3-1.

**Table 3-1: Masset Transfer Station Expenses**

	<b>Expense/Year (\$)</b>
Contract Services	2,810
Staffing	25,433
Bin Hauling	36,941
Maintenance	1,351
<b>Total</b>	<b>\$66,535 \$</b>

The Islands Service Area budget is not broken down by facility so the approved 2023 budget for this Transfer Station is estimated to be \$72,146.

### **3.1.1 Reason for Review and Possible Changes to the Service (MTS)**

It is suggested by NCRD staff that the costs to operate the MTS would be better spent ensuring the Islands Landfill remains in compliance with regulations and all necessary safety and environmental precautions are implemented and monitored in one central location. This review looks at the optional closure of the MTS as soon as possible and enhancements to the existing curbside collection service.

The MTS no longer receives loads of refuse from commercial collection vehicles as they go direct to the Islands Landfill 25 minutes' drive south of Masset. Since the area has a curbside collection program in place, any additional non-program waste could be stockpiled until a full load is generated and therefore less frequent trips are made. Residents could feasibly also combine loads or hire a truck to pick up items for transport to the Islands Landfill. This demand for commercial collection services may generate jobs in the community.

Enhancements to the existing collection service to make this change more palatable to residents could include a bulky item pickup service provided biannually to residents



already receiving a curbside garbage collection service, primarily to assist with property clean-up and to assist those that are unable to transport heavy/large items to the Islands Landfill themselves. This service could occur annually or bi-annually at an estimated cost of \$6,000 per year per event (5 days x 6 hours/day x \$200/hour). The capital cost to purchase a trailer is estimated to be \$10,000. This trailer could be pulled by the Solid Waste truck.

Alternatively, the NCRD could offer ‘free tipping days’ at the Islands Landfill to encourage residents to bring their waste directly to the landfill instead of stockpiling on their property or illegally dumping it.

The costs to clean up potential illegal dumping until residents get used to the new system should be considered when services change. Also, costs of closing the MTS would need to be considered as well as the termination of agreements or contracts associated with the MTS. Sufficient notice to area residents and businesses should be provided (e.g., minimum six months). Operations staff could be reallocated to assist with program changes.

### **3.2 Sandspit Transfer Station**

The Sandspit Transfer Station (SaTS), located off Copper Bay Road on Moresby Island about 10 km from the unincorporated community of Sandspit, serves residents of the greater Sandspit area, in Electoral Area E, and is open two days per week: Tuesday 11:00 am to 1:00 pm and Saturday 11:00 am to 1:00 pm (4 hours/week). As the only community on Moresby Island, Sandspit has accommodations, a campground, supermarket and an 85-berth harbour and airport to serve residents and visitors. The BC Ferry at Alliford Bay to Skidegate Landing on Graham Island has 12, 20 minute (one way) trips every day of the week and two Dangerous Goods sailings on Thursday to connect residents, businesses and visitors to Daajing Giids, the Islands Landfill and Masset. The return fare is \$9.30/adult passenger plus \$2.35/foot for commercial vehicles and \$21.60/standard vehicle.

Electoral Area E had a population of 325 as of the 2021 census with the vast majority living in Sandspit. The total number of private dwellings is listed at 251, with 161 occupied by usual residents. The Electoral Area is governed by the NCRD Board of Directors.



As seen in the photo to the left, there are two bays for 30 cubic yard roll off containers with lids at the site. There are also stockpiles for tires, scrap metal, scrap vehicles and clean wood, which is burned periodically, as well as a septage receiving pit. Refrigeration units are decommissioned (refrigerant removed) and then stockpiled with scrap metal. The site is attended by an NCRD contractor for the four hours per week. They use their vehicle for protection from the weather as there is no gate house. The contractor removes CFCs from refrigeration units, stacks and sorts metal and tires and maintains roads.

Residential self-haul and commercial waste deposited in the roll-off container is transferred to the Islands Landfill north of Port Clements, about 112 km, or 2.5 hours one way, including the ferry travel. Construction, renovation and demolition (CRD) waste is stockpiled on site and burned regularly by the contractor. The quantity of waste transported to the Islands Landfill in 2021 was estimated to be 533 m<sup>3</sup>, or approximately 107 tonnes per year. NCRD staff estimate bin hauling occurs four to five times per month. Tires are collected and recycled by Tire Stewardship BC and the MARR stewardship agency provides funding for the major appliances program. The NCRD provides a curbside collection service to the residences once per week for garbage and hauls this material direct to the Islands Landfill.

Even though the site is not fenced, according to NCRD staff, illegal dumping is not an issue. The septage pit is fenced.

The cost to operate the SaTS in 2022 was estimated to be \$49,961 and the revenue was \$28,445. The cost breakdown is shown below in Table 3-2.

**Table 3-2: Sandspit Transfer Station Expenses**

	<b>Expense/Year (\$)</b>
Land Lease/Rental	-
Contract Services	8,441
Bin Hauling	37,545
Maintenance	3,975
<b>Total</b>	<b>\$49,961</b>

The Islands Service Area budget is not broken down by facility so the approved 2023 budget for this Transfer Station is estimated to be \$55,841

### 3.2.1 Reason for Review and Possible Changes to Service (SaTS)

This review looks at operational enhancements and efficiencies for waste generated in the Sandspit area.

The SaTS does not receive loads of refuse from commercial collection vehicles as businesses self-haul their waste to the SaTS. The residential curbside garbage collection contractor for the NCRD hauls direct to the Islands Landfill. Providing an incentive for businesses to hire a commercial collection contractor that hauls direct to the Islands Landfill, as the NCRD's residential collection contractor does, could include the banning of commercial waste at the SaTS. This would result in substantially less bin hauling trips from the SaTS to the Islands Landfill, thereby reducing the NCRD costs. Local government typically does not provide waste collection services for the Industrial, Commercial and Institutional (ICI) sector unless local government has the capacity and costs are fully recovered. Local government provided services normally come at a lower cost as profit is not the driver.

Alternatively, if businesses wish to continue to use the SaTS, tipping fees should be reviewed and raised to support their use of the facility and ensure its economic viability and sustainability.

Convenience is a big factor when it comes to transport of waste to the next available disposal facility as the ferry schedule needs to be considered and the nearest landfill is a substantial distance from the ferry terminal. Business owners could feasibly combine loads or hire a truck to pick up items for transport to the Islands Landfill. This demand for commercial collection services may generate jobs in the community.

The costs of cleaning up illegal dumping until businesses get used to the new system should be considered when services change. Also, sufficient notice to area businesses should be provided (e.g., minimum six months).

### 3.3 Skidegate Transfer Station

The Skidegate Transfer Station (STS), built on a closed landfill, is located on Hwy 16 about 10 km north of the community of Skidegate, one of the two cultural centres of the Haida nation on the islands. The STS serves residents of the greater Skidegate area (Skidegate Band, Skidegate Landing, Miller Creek, and Daajing Giids), in Electoral Area D, and is open two days per week: Wednesday 1:00 pm to 5:00 pm and Saturday 11:00 am to 3:00 pm (8 hours/week). The Skidegate Band has an agreement with the NCRD to use the STS for residential tipping..

The service population as of the 2021 census is estimated to be 1941 (not including Sandspit and area). The total number of private dwellings is approximately 980, with

approximately 887 occupied by usual residents. The area is governed by the NCRD Board of Directors (Electoral Area D), Daajing Giids Village Council and Skidegate Band Council.



As seen in the photo to the left, there are two bays for 30 cubic yard roll off containers with lids at the site. There are also stockpiles for tires, scrap metal, and clean wood, which is burned periodically by a contractor, as well as a septage receiving pit. A small shipping container is used for the collection of used oil and filters. Refrigeration units are decommissioned (refrigerant removed by NCRD staff) and then stockpiled with scrap metal. The site is attended by an

NCRD casual employee for the eight hours per week (they average about five hours/day). There is a gate house for protection from the weather. An employee removes CFCs from refrigeration units, and during the burning event, the contractor stacks and sorts metal and tires and maintains roads with equipment (e.g., excavator) the NCRD does not have.

Waste deposited in the roll-off containers is transferred to the Islands Landfill north of Port Clements, about 60 km, or 46 minutes one way. The quantity of waste transported to the Islands Landfill in 2021 was reported to be 2,442 m<sup>3</sup>, or approximately 488 tonnes per year. NCRD staff estimate bins are hauled about two to three times per week to the Islands Landfill. Tires are collected and recycled by Tire Stewardship BC and the MARR stewardship agency provides funding for the major appliances program. The NCRD provides a curbside collection service to the residences in the Electoral Area and the municipality of Daajing Giids once per week for garbage and the contractor hauls this material direct to the Islands Landfill. Skidegate Band Council operates a residential collection service and materials are dropped off at the STS. The Skidegate Band Council also operates a commercial waste collection program in their community and this material is tipped at the STS without an agreement in place during non-open hours (they have a key for the gate).

Even though the site is not fenced except for the septage receiving area, according to NCRD staff, illegal dumping is not an issue, except for the commercial waste tipped in the bins by the Skidegate Band Council that has yet to be discussed and resolved.

The cost to operate the STS in 2022 was \$86,493 and the revenue was \$23,076. The cost breakdown is shown below in Table 3-3.

**Table 3-3: Skidegate Transfer Station Expenses**

	<b>Expense/Year (\$)</b>
Contract Services	3,822
Staffing	16,634
Bin Hauling	59,106
Maintenance	6,931
<b>Total</b>	<b>\$86,493</b>

\*

The Islands Service Area budget is not broken down by facility so the approved 2023 budget for this Transfer Station is estimated to be \$87,623

### **3.3.1 Reason for Review and Possible Changes to the Service (STS)**

This review looks at operational enhancements and efficiencies for disposal of waste generated in the Skidegate and Daajing Giids areas.

The STS receives loads of refuse from commercial collection vehicles operated by the Skidegate Band Council, and the NCRD residential curbside collection contractor hauls direct to the Islands Landfill 46 minutes' drive north, then west of the Skidegate community. To reduce the hauling costs for bins destined for the Islands Landfill, the Skidegate Band Council collection vehicle should go direct to the Islands Landfill just as the NCRD contractor does. It is possible that hauling costs will be substantially reduced if this were to be required by the NCRD.

Enhancements to the existing collection service to make this change more palatable to residents could include a bulky item pickup service and additional 'free tipping days', besides the regular 'clean up days' provided by local government as described above in Section 3.1.1.

Sufficient notice to area residents and businesses should be provided (e.g., minimum six months) for any program changes, e.g., direct haul of commercial loads from the Skidegate area to the Islands Landfill at potentially higher costs to the residents and businesses.

## 4. RECYCLING DEPOTS UNDER REVIEW

The recycling facilities and services provided by the NCRD that are the subject of this TM are described in this section, including the reason for their inclusion in the study.

### 4.1 Daajing Giids Recycling Depot

The Daajing Giids Recycling Depot (DGRD) is located at 1205 Oceanview Drive in Daajing Giids in the Ticker's Hauling & Storage building. The DGRD serves residents and businesses in the Village of Daajing Giids, communities of Skidegate and Sandspit, Electoral Area E, and Electoral Area D (south). It is open three days per week: Sunday, Monday and Tuesday 10:00 am to 4:00 pm (18 hours/week).

The population served by the DGRD is estimated to be 2,266 based on the 2021 Census, and the number of private dwellings is estimated to be 1,048 – 1,231 (the lower figure occupied by usual residents). The NCRD rents the depot portion of the building from the owner.



The DGRD, pictured to the left, is operated by one NCRD employee and is funded by the Recycle BC stewardship program effective January 31, 2023... Paint, used oil and oil containers, electronics, small appliances, smoke alarms, light bulbs, mercury thermostats and batteries are also accepted at the depot and these items are supported financially by stewardship agencies under agreement with the NCRD. The packaging and printed paper is baled and stockpiled to await shipping by transport trailer to Prince Rupert via BC Ferries. Stewardship agencies

are responsible for collecting and shipping materials and often will wait until enough material is stored before transport is economical to locations off Haida Gwaii.

The photo to the right shows stockpiled materials generated primarily by the stewardship programs and received for shipping from the Islands Landfill depot. Although this is a convenient location to stockpile materials to await a full transport load (48 skids) to the NCRD Recycling Depot in Prince Rupert the stewards do not contribute to the rent for the space. Securing enough storage for these materials can result in higher rental fees.,



Materials to be consolidated at the Islands Landfill depot are hauled on a regular basis by NCRD staff using the NCRD's van with a power tailgate. This same van transports material from the Islands Landfill recycling depot to be stockpiled for shipment via the Skidegate Landing ferry to Prince Rupert. The travel distance is about 77 km from the Landfill depot to the DGRD, or just over one hour, and the transport time is over eight hours from this depot to the NCRD Regional Recycling Depot (RRD) in

Prince Rupert via BC Ferries . The quantity of material is not tracked by facility in the Islands Service Area, nor do the Stewards report their quantities by depot.

Recycle BC has very recently established an agreement with the NCRD to fund and accept the collection of residential quantities of packaging and printed paper at the DGRD and Masset Recycling Depot (MRD). The NCRD is required to keep all commercial packaging and printed paper separate, including in stockpiles prior to shipping. Recycle BC materials generated in the ICI sector will be processed at the Islands Landfill recycling depot only. However, an additional baler outside of the depot is available at the DGRD if processing of ICI sector material is needed. It is not known at this time how much Recycle BC revenue will offset depot costs.

The cost to operate the DGRD in 2022 was \$96,872 and the revenue was \$2,884. The cost breakdown is shown below in Table 3-4.

**Table 4-1: Daajing Giids Recycling Depot Expenses**

	Expense/Year (\$)
Rental of equipment and building	30,150
Staffing	38,094

	<b>Expense/Year (\$)</b>
Materials Hauling	23,827
Maintenance	4,801
<b>Total</b>	<b>\$96,872</b>

The Islands Service Area budget is not broken down by facility so the approved 2023 budget for this Recycling Depot is estimated to be \$35,429

**4.1.1 Reason for Review and Possible Changes to the Service (DGRD)**

It has been suggested by NCRD staff that the number of recycling depots could be reduced and collection, processing and shipping could be centralized at the Islands Landfill where the depot is currently open Monday to Friday (10:00 am – 3:00 pm) and the first Saturday of each month (11:00 am – 3:00 pm) for drop off of all of the materials currently collected at the DGRD and the Masset Recycling Depot.

The costs to operate the DGRD far outweigh the revenue from taxation, user fees and stewardship agency funding. The rent cost alone is more than the revenue received. As the costs and revenues for the Islands Solid Waste Management service are for the most part amalgamated, existing fees and charges for other services cover the costs. However, the quantity of material diverted from disposal and managed at the facility is not considered worth the expense. Also, it has been suggested that the funding for this facility may be better spent upgrading the central recycling depot at the Islands Landfill if there is sufficient space available for additional infrastructure, and also spent on covering shipping costs to the NCRD Recycling Depot in Prince Rupert.

Additional user fees may be an option to make this facility more economically sound. Currently the Skidegate Band and OMVC do not pay into the recycling service on the Islands (only the disposal services). New agreements with these two communities may help recover some of the costs associated with the recycling service on the Islands.

An alternative to operating the DGRD is to implement a curbside recycling program for Recycle BC materials, including packaging and paper, on the same route or similar to that currently operated on the Islands for garbage collection, but every two weeks or less frequently. This is expected to increase the amount of material diverted due to the increased convenience. Collection trucks would haul direct to the Islands Landfill recycling depot where material is currently consolidated. Although the cost is estimated to be about \$70,000 per year for this curbside program, these costs could be reduced substantially with Recycle BC on-board and by procuring the carts using grants. Procurement of this additional service would need to be tendered as per the NCRD policies.





Although not currently acceptable to the Village of Daajing Giids who requested a recycling depot be provided by the NCRD in their community, packaging and printed paper materials not collected curbside could be dropped off at a community bin similar to the one at Sandspit and Tlell, including for OCC, paper, containers, Styrofoam, film plastic, and glass containers. The users would be expected to be from both the commercial and residential sector. Although stewards do not include collection and processing of commercial packaging and printed paper in their current programs, they will accept a certain percentage of commercially generated material mixed with the residential material.



It is recommended that this change in collection be implemented first should the DGRD be closed. To supplement self-haul of recyclables generated by businesses, commercial haulers should be encouraged to service businesses in the area with direct haul to the Islands Landfill recycling depot. These specialized collection containers could use megabags inside used or new shipping containers similar to those used in the Columbia Shuswap Regional District as shown in the photo to the left. The cost of these specialized containers is about \$6,000 (not

including shipping). The hauling of the material to the Islands Landfill recycling depot for processing and shipping would be similar to the cost incurred for the other two community bins and is estimated to be about \$3,000 per year.

Additionally, more substantial annual roundups (supplementary to existing electronics roundup) could be implemented in Daajing Giids for only the items supported by stewards (e.g., batteries, oil, paint, pesticides, etc). If not supported both financially and physically by stewardship agencies NCRD would need to haul materials collected to the Islands Landfill for processing and shipping with due consideration given to transporting Hazardous Waste. This cost is estimated at \$2,500 per year (2 events). To make these events attractive to residents and businesses, other activities could be encouraged such as 'repair cafes', trunk sales or flea markets, farmers markets, and other community activities. These events also provide opportunities for setting up educational booths organized by the NCRD and member municipalities to promote services offered not only with respect to solid waste management but also concerning other services such as emergency response, etc.

Costs to close the DGRD would need to be considered as well as the termination of agreements or contracts associated with the DGRD. Sufficient notice to area residents and businesses should be provided (e.g., minimum six months). Operations staff could be reallocated to assist with program changes such as for processing of potentially more materials at the Islands Landfill depot.

## 4.2 Masset Recycling Depot

The NCRD opened the Masset Recycling Depot (MRD) in August 2021 to service the north Islands area. It is located at 1730 Hodges Road in the Greater Massett Development Corporation building, and is open Thursday, Friday and Saturdays from 9:00 a.m. to 3:30 p.m. The materials accepted at this depot are the same as those accepted at the other two NCRD depots on Haida Gwaii. They are transported from the MRD to the Islands Landfill depot for baling and then to the DGRD for stockpiling prior to shipment off Island. The depot is operated by NCRD staff, including transport of material to the other two depots.

The cost to operate the MRD in 2022 was \$82,515 and the grant revenue was \$58,768. The cost breakdown is shown below in Table 4-2.

**Table 4-22: Masset Recycling Depot Expenses**

	<b>Expense/Year (\$)</b>
Rental of building	14,365
Staffing	40,951
Materials Hauling	22,856
Maintenance of building and equipment	1,575
<b>Total</b>	<b>\$82,515</b>

The Islands Service Area budget is not broken down by facility so the approved 2023 budget for this Recycling Depot is estimated to be a shortfall of \$16,283.

### 4.2.1 Reason for Review and Possible Changes to the Service (MRD)

It has been suggested by NCRD staff that the number of recycling depots could be reduced and collection, processing and shipping could be centralized at the Islands Landfill where the recycling depot is currently open Monday to Friday (10:00 am – 3:00 pm) and the first Saturday of each month (11:00 am – 3:00 pm) for drop off of all of the materials currently collected at the DGRD and the Masset Recycling Depot. As the costs and revenues for the Islands Solid Waste Management service are for the most part amalgamated, existing fees and charges for other services cover the costs. However, the quantity of material diverted from disposal and managed at the facility is not considered worth the expense. Also, it has been suggested that the funding for this facility may be better spent upgrading the central recycling depot at the Islands Landfill and spent on covering shipping costs to the NCRD Recycling Depot in Prince Rupert.

Additional user fees may be an option to make this facility more economically sound. Currently the Skidegate Band and OMVC do not pay into the recycling service on the Islands (only the disposal services). New agreements with these two communities may help recover some of the costs associated with the recycling service on the Islands.

As outlined above for the DGRD, an alternative to operating the MRD is to implement a curbside recycling program for Recycle BC materials, including packaging and paper, on the same route or similar to that currently operated on the Islands for garbage collection, but every two weeks or less frequently. This is expected to increase the amount of material diverted due to the increased convenience. Collection trucks would haul direct to the Islands Landfill recycling depot where material is currently consolidated. Although the cost is estimated to be about \$70,000 per year for this new Islands curbside program (includes Daajing Giids, Port Clements and Masset), these costs could be reduced substantially with Recycle BC on-board and by procuring the carts using grants.

It is our understanding that the OMVC is currently looking to implement curbside recycling in the Village. As part of this, the OMVC would require a location to process the material collected and ship it off the Island. If the NCRD provided this service, the most practical location would be the Islands Landfill depot where other materials are consolidated. Handling these materials twice, if the MRD were to be used, would not be cost efficient. Also, in order to cover these costs, consideration would need to be given to cost recovery agreements.

As discussed above for the southern Island area, packaging and printed paper materials not collected curbside could be dropped off at a community bin like the one at Sandspit and Tlell, including for OCC, paper, containers, Styrofoam, film plastic, and glass containers. The users would be expected to be from both the commercial and residential sector. It is recommended that this change in collection be implemented first if the MRD is closed. To supplement self-haul of recyclables generated by businesses, commercial haulers should be encouraged to service businesses in the area with direct haul to the Islands Landfill recycling depot. Although stewards do not include collection and processing of commercial packaging and printed paper in their current programs, they will accept a certain percentage of commercially generated material mixed with the residential material. These specialized collection containers could use megabags inside used or new shipping containers like those pictured above that are used in the Columbia Shuswap Regional District. The cost of these specialized containers is about \$6,000 not including shipping. The hauling of the material to the Islands Landfill recycling depot for processing and shipping would be similar to the cost incurred for the other two community bins and is estimated to be about \$3,000 per year using the current van or a flat deck truck and/or trailer.

Additionally, more substantial annual roundups (supplementary to existing electronics roundup) could be implemented in Masset for only the items supported by stewards (e.g., batteries, oil, paint, pesticides, etc). If not supported both financially and physically by stewardship agencies NCRD would need to haul materials collected to the Islands Landfill

for processing and shipping with due consideration given to transporting Hazardous Waste. This cost is estimated at \$2,500 per year (2 events). To make these events attractive to residents and businesses, other activities could be encouraged such as 'repair cafes', trunk sales or flea markets, farmers markets, and other community activities. These events also provide opportunities for setting up educational booths organized by the NCRD and member municipalities to promote services offered not only with respect to solid waste management but also concerning other services such as emergency response, etc.

Costs to close the MRD would need to be considered as well as the termination of agreements or contracts associated with the MRD. Sufficient notice to area residents and businesses should be provided (e.g., minimum six months). Operations staff could be reallocated to assist with program changes such as the processing of potentially more materials at the Islands Landfill depot.

### 4.3 Commercial Cardboard Collection – Island Service Area

The NCRD provides a curbside collection service to the ICI sector on Haida Gwaii for large generators such as schools, stores, restaurants, the hospital and the airports to prevent them from filling up the community bins on the Island. A one cubic meter bag is provided to their 34 customers and a pickup fee of \$20/pickup is charged currently for an unlimited amount of material and billed to the customers on a monthly basis. Staff operate a van dedicated to hauling recyclables on the Island and services the route to these customers about twice per week. Some ICI customers, approximately 12, haul their own material to the DGRD for a fee of \$10 per full pickup truck load (\$5.00 for ½ ) on the honor system. The site is not secured.

The cost to operate the Islands ICI program in 2022 was \$77,232 and the revenue was \$33,500. The cost breakdown is shown below in Table 4-1.

**Table 4-3: Commercial Cardboard Collection Program Expenses**

	Expense/Year (\$)
Staffing (Hauling)	32,858
Materials Hauling	31,521
Maintenance	12,853
<b>Total</b>	<b>\$77,232</b>

The Islands Service Area budget is not broken down by facility so the approved 2023 budget for the ICI service is estimated to be \$13,185 (this budget assumes that a portion

of the ICI hauling charges off-Island will be paid by Recycle BC as the loads will be combined for transfer to the RRD).

The program was implemented in 2015 when the ICI sector requested it, and the costs have not been adjusted since then. The user fees cover about 25% of the costs for this program. Staff have recommended an increase of \$20/bag instead of per pickup.

#### 4.3.1 Reason for Review and Possible Changes to the Service

This service is reviewed in the TM to determine if it is self-sustaining with current user fees or if changes need to be made to the user fees, to the way the service is operated, or if it needs to be eliminated altogether to be replaced with a privately managed service.

It is the staff's recommendation that the commercial cardboard collection program be self-sustaining. Therefore, at an estimated cost of \$102,170 in 2022 for the program, and 3,264 pickups per year for the 34 businesses, the rate should be increased to at least \$32/pickup. For a large generator that appreciates the convenience of this service, their average increase in annual cost would be about 60% or \$1,152/year to \$3,072/year. The drop off customers should also have a rise in fees to support the program, but not as steep, to cover the increasing costs for wages, fuel, processing and shipping. The other funding mechanism is taxation, however, all businesses would need to be taxed and an 'opt out' policy implemented if they do not generate this material. With RBC coming online in 2023 these costs may change somewhat for the percentages of this ICI recycling stream that they will cover. Actual costs will be forthcoming once the stewardship portions of the service become clear.

Alternatively, if this service were to instead be operated by a private company and not managed by the NCRD, either using door-to-door service or container service, the commercial hauler would still bring the material to the Islands Landfill recycling depot for processing (or to the DGRD if the outdoor baler is put into service). Depending on the profit the private service providers want, the customer's costs could rise from current levels since all the above costs would still be incurred as well. Since the NCRD does not have to make a profit, the customer would be in a safer financial position.

Alternatively, eliminating the service could potentially result in negative consequences with respect to both collection and disposal of the material. As witnessed prior to implementation of the ICI collection program, the community bins could overflow regularly, or quantities at the DGRD could become unwieldy from businesses self-hauling to the depot. Also, unless this material is banned or prohibited at the Islands Landfill, businesses could feasibly decide to dispose of the material instead of recycling it, and the goals of the NCRD solid waste management plan would not be met.

Whichever option is approved, the NCRD would need to notify their customers of the changes, including substantial lead time, especially if the service elimination option is chosen.

#### 4.4 Commercial Office Paper Collection – Mainland Service Area

The NCRD currently provides a door-to-door office paper collection service with 1,281 ICI pickups per year in the greater Prince Rupert area (approximately 50 customers). The service includes regular (varies with customer) pickup service in customer provided plastic bags of co-mingled office and other paper/fiber at a rate of \$15, \$20 or \$30 per pickup depending on the quantity of material per pickup. This service is conducted with a dedicated van and driver. The driver conducts the service Tuesday to Friday, six hours per day. The service diverts approximately 42 tonnes of paper per year from disposal. Material is tipped at the RRD and baled for shipping to market but notwith the Recycle BC program material at the RRD.

This program is not budgeted separately so a cost estimate has been developed with several assumptions. The following table summarizes the cost breakdown and provides an explanation of how the cost information was sourced. Note that the market price for this material is relatively low at this point so no commodity sales revenue has been included.

**Table 4-4: Commercial Recycling Program Costs**

<b>ANNUAL COST:</b>		
Van replacement	\$ 10,000	Manager recommended \$50,000/10 yr replacement
Operating Costs (insurance/fuel/R&M)	\$ 14,228	Provided by Treasurer
Wage Costs (including benefits)	\$ 40,756	Provided by Manager
Cost for Truck & Driver	\$ 64,984	
Processing Cost (baling, shipping)	\$ 13,843	2021 costs/2019 tonnage @\$329.59/tonne office paper
<b>Total Cost</b>	<b>\$ 78,827</b>	
Collections in 2021	1281	
Average Cost per Collection	\$ 61.54	
Plus 10% - Admin	\$ 67.69	

Using the highest cost level of \$30/pickup, this price alone is less than half the price needed to make the program self-sustaining.

The benefits of the NCRD managing and operating this collection program include the following:

- Customer costs can be kept at a reasonably manageable level as local government does not have to make a profit when delivering a service.
- A door-to-door service is substantially more convenient than if the business must drop off the material at the RRD.
- The City of Prince Rupert can prohibit the material from disposal at their landfill and still rely on a service to replace disposal.

#### 4.4.1 Reason for Review and Possible Changes to the Service

This service is reviewed in this TM to determine if it is self-sustaining with current user fees or if changes need to be made to the user fees, to the way the service is operated, or if it needs to be eliminated altogether to be replaced with a privately managed service.

It is the staff's recommendation that the commercial cardboard collection program be self-sustaining. Therefore, at an estimated cost of \$78,827 for the program, and 1,281 pickups per year, the rate should be increased to at least \$68/pickup. For a large generator that appreciates the convenience of this service, their average increase in annual cost would be about 127%. Drop off ICI customers are currently not charged a fee. This could also change to a rate that covers the cost of sorting, processing and shipping. The fees could be similar to that which is charged to the City of Prince Rupert for their collected material (\$179/tonne). Monitoring the users on a daily basis to determine if they are from the ICI sector may be challenging, that is, all the facility users may have to be asked/required to check in with an attendant.

Alternatively, if this service were to instead be operated by a private company and not managed by the NCRD, either using door-to-door service or containers, the commercial hauler would still bring the material to the RRD for processing unless they developed their own facility. This user could be easily monitored and charged an appropriate fee. Depending on the profit the private service providers want, the customer's costs could rise from current levels since all the current costs would still be incurred as well. Since the NCRD does not have to make a profit, an NCRD provided service would leave the customer in a safer, and feasibly more dependable, financial position.

Alternatively, eliminating the service could potentially result in negative consequences with respect to both collection and disposal of the material. As witnessed prior to implementation of the ICI collection program, the community bin could overflow regularly, or quantities at the RRD could become unwieldy from businesses self-hauling to the depot. Also, unless this material is banned or prohibited at the Prince Rupert Landfill, businesses could feasibly decide to dispose of the material instead of recycling it, and the goals of the NCRD solid waste management plan would not be met.

Whichever option is approved, the NCRD would need to notify their customers of the changes, including substantial lead time, especially if the service elimination option is chosen.

## 5. POSSIBLE PRINCE RUPERT LANDFILL TRANSFER TO NCRD

Throughout engagement to date, the possibility of accepting ownership of the Prince Rupert Landfill (PRL) from the City of Prince Rupert has been raised. The Board of Directors agreed to participate in and share the cost of a workshop to learn more about the Landfill. This initial meeting is expected to be the first of several to discuss the pros and cons of the request. A second meeting to provide detail on projected operating and capital costs is planned for early Fall 2023.

With respect to the Draft SWMP, both parties have agreed that the SWMP Update should only include text that introduces the initiative and states that the transfer of the Landfill to the NCRD is currently under review.

During the second round of public consultation to engage the public and stakeholders on the above revisions to the 2022 Draft SWMP, SHA will ensure that all comments referring to this initiative are recorded for future review if or when a Landfill ownership transfer process is started.



## 6. SEPTAGE WASTE MANAGEMENT

During the last year it has become evident that upgrades to the Septage Receiving Facility at the Skidegate Transfer Station are needed. In December 2022 SHA submitted a proposal to the NCRD Manager of Operations to prepare a Skidegate Septage Treatment Lagoon Management Plan (Plan) to meet the requirements of Section 3.1 of the facility's Operational Certificate No. 16840 (OC). The facility is authorized to receive 150 m<sup>3</sup> per year of septic tank and holding tank sludges for which the septage treatment lagoon was considered to be adequate. However, the facility is currently receiving waste from the Skidegate Band Council's Waste Water Treatment Plant, the Kwuna Ferry system, the BC Ferries office, Skidegate Landing and from a number of local portable toilets. The NCRD asked that the Plan be developed for the following two options:

- authorized waste only
- authorized waste plus other wastes that are currently being disposed.

The primary reason the NCRD has asked that this facility be included in the SWMP is that the sludge removed from the lagoon, as part of regular lagoon maintenance, is dried and made ready for transport to the Islands Landfill where it can be used for operational purposes. Also, consultation on the Plan could be piggybacked onto the SWMP second round of consultation that will occur in the summer of 2023.



As seen in the photo to the left, the facility consists of two lagoons surrounded by a perimeter fence with locking gate and sludge drying beds between the lagoons and the Transfer Station.

The site is accessed daily by private contractors and is open to the public two days per week (Transfer Station is open on Wednesdays and Saturdays). The current treatment method is to fill

one lagoon and then let the free liquid dissipate while the second is being filled. The sludge is removed to one of three drying beds outside the fence and mixed with woodchips to aid in drying and to control runoff. Any free water from the drying beds drains towards lagoon 2 and the low areas below the lagoons at the tree line. There are no known groundwater monitoring or drinking water wells in the vicinity or surface water monitoring stations.

The Plan is anticipated to be completed in 2023. This Plan will identify the upgrades required, the service area, the operational requirements, and the costs to protect the environment, provide a sustainable well operated facility to Island stakeholders, and to comply with the OC.

## 7. REFERENCES

Statistics Canada. 2017. North Coast [Economic region], British Columbia and Canada [Country] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017.

Statistics Canada. 2022. (table). Census Profile. 2021 Census. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released February 9, 2022.  
<https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E> (accessed February 9, 2022).

## 8. 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  $\diamond$  use  $\diamond$  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:** The 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:** The 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

## 9. 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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**APPENDIX A**  
**Public Consultation and Engagement Plan (Revision 1)**

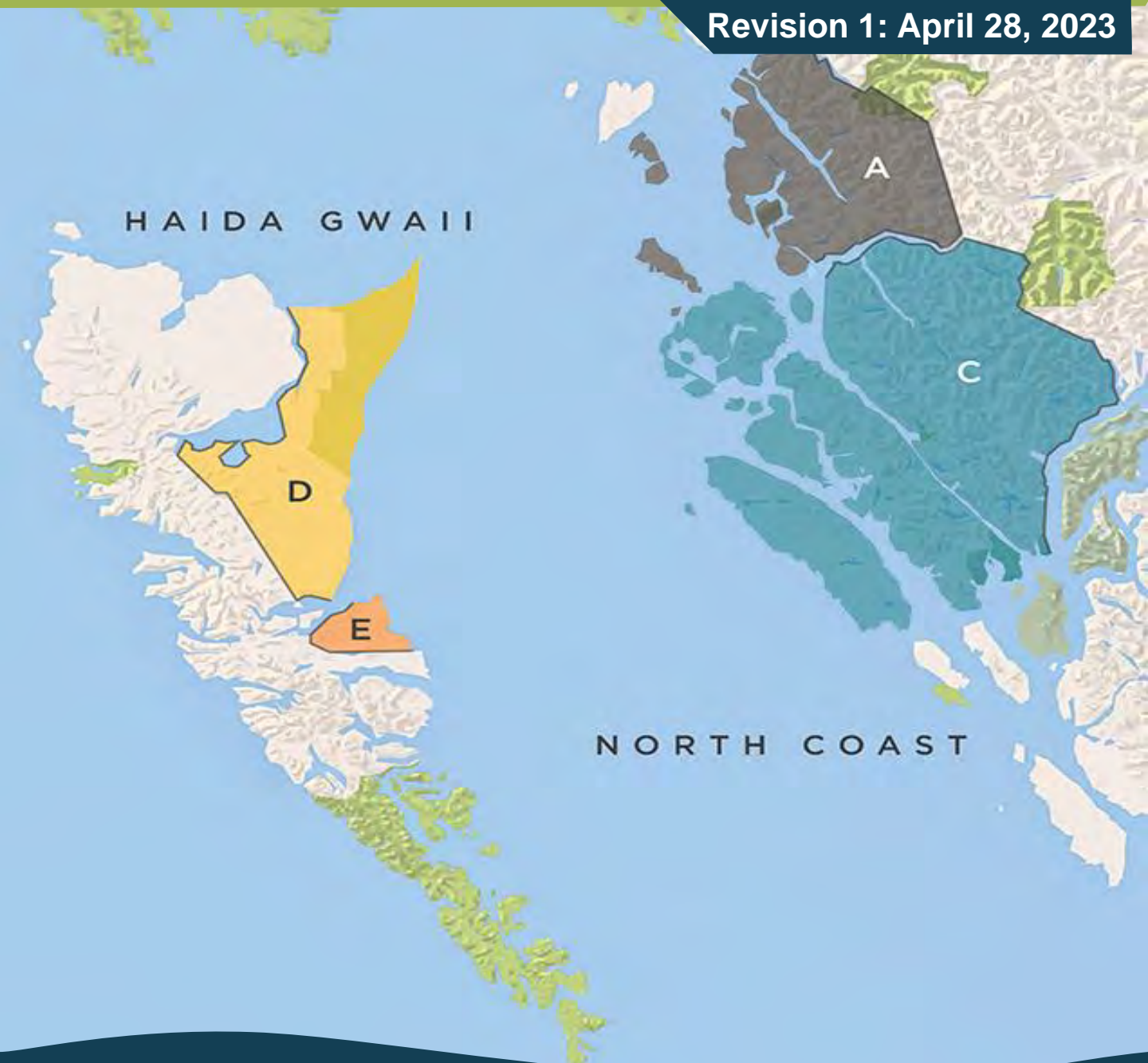
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# SOLID WASTE MANAGEMENT PLAN PUBLIC CONSULTATION & ENGAGEMENT PLAN

**NORTH COAST REGIONAL DISTRICT**  
Prepared by: Sperling Hansen Associates Inc.

**Revision 1: April 28, 2023**



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## 1 INTRODUCTION

Between 2021 through 2023, the North Coast Regional District (NCRD) is undertaking a review and update of its 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 municipal solid waste (MSW) collection, disposal, reduction and recycling and service cost recovery. SWMPs are required for all regional districts in British Columbia under the Environmental Management Act (EMA). The NCRD's first and only SWMP was adopted in 1996 under the former Skeena-Queen Charlotte Regional District and the many initiatives outlined therein have been implemented.

A key part of this planning process is the public engagement and consultation, which is to be initiated during the Draft SWMP creation in accordance with the BC Guidelines for Solid Waste Management Planning. Throughout the SWMP process, the NCRD Public Technical Advisory Committee (PTAC), a group with technical, non-technical, First Nation, public, community interest, and elected official representation, meet to discuss the objectives, strategies, options, and progress of the SWMP. PTAC provides recommendations to the NCRD Board of Directors for consideration. The organizations that form the current PTAC are listed below.



To engage with other stakeholders within the NCRD, including area First Nations, a strategy has been created with the aim of engaging the public early in the process so that their input and feedback can be part of the plan development. This early engagement is critical to the success of our planning efforts. This Consultation Plan presents the proposed initiatives to reach the broadest audience and receive constructive feedback with which to inform the SWMP.

After the first round of consultation was completed, changes to the Draft SWMP were requested. This Consultation Plan has been modified to include additional consultation and engagement during the summer of 2023 to ensure the changes are broadly discussed, with the general public, stakeholders and First Nations before the SWMP is finalized by the Board.

For the NCRD planning process, we envision the most effective means of communication to conduct consultation, includes local media, online social platforms, and the NCRD website. The in-person engagement component will also be essential for stakeholders to better understand the plan objectives and options. Open houses will take place after the second Draft SWMP has been submitted to the PTAC for review and comment, and the NCRD Board of Directors have released the Draft for consultation. In addition, we propose the use of a digital online survey, which will provide the NCRD with extensive data and feedback on solid waste issues and concepts.

Aside from engaging the public early, other objectives of the consultation process are to provide consistent information throughout the project phases and create the opportunity for residents and businesses to comment on the draft plan. Most, if not all, of the engagement in the consultation periods will allow direct quantification of viewership and engagement with consultation materials. Specifically, with online viewership, we will be able to tally the following:

- Number of webpage visits
- Number of surveys completed
- Number of different individuals visiting the webpage
- Document downloads
- Facebook page visits and comments.

Best practices in regional solid waste management planning requires that adequate public review and consultation of the SWMP must be completed. In addition, the public consultation process was designed to meet elector approval requirements for any borrowing of funds required to implement the plan once it is approved.

## **1.1 Background and Consultation Objectives**

The NCRD's first solid waste management planning process was initiated prior to the 1995 SWMP, which was approved by the Ministry of Environment and Climate Change Strategy (ENV) and subsequently adopted by the RD Board in 1996. Most of the 1996

plan was implemented by the NCRD and some items will carry forward under the new Plan.

The objectives of public consultation associated with the current planning process are as follows:

- To ensure requirements under the Environmental Management Act (EMA) are met
- To ensure the public consultation considerations outlined in the Guide to Solid Waste Management Planning are addressed
- To engage the PTAC and public early in the process and provide sufficient time to consider the feedback received during the preparation of the plan
- To provide interested parties with open, transparent information throughout the planning process and prior to RD Board recommendations
- To provide opportunities for input and feedback during the process and once the draft Plan is released.

## **2 PLAN INITIATION**

The SWMP review process was identified as a priority project by the NCRD Board. The process was initiated in 2021 with the tendering and selection of the project consultant, Sperling Hansen Associates, (SHA) to guide the process and complete required background data collection, development of Technical Memoranda, and presentations to PTAC and the Board, followed by development and presentation of the first and second draft SWMP.

Following these steps, the public portion of the planning process can be initiated with the finalization and implementation of this Consultation Plan.

## **3 PUBLIC CONSULTATION – THE PLAN**

The public consultation process is to be executed in three phases:

- Phase 1 - Prior to drafting of the SWMP (July 2022 – September 2022)
- Phase 2 - Following completion of the draft SWMP (October – December 2022)
- Phase 3 (new) – Following update and approval by the Board of the second draft SWMP (June – August 2023).

The first, second and third phases include a survey which are intended to find out how the public is using the current system, gauge their satisfaction and convenience levels, identify areas they would like to see contemplated through the SWMP review process, and provide an opportunity to comment on the initiatives presented in the draft SWMP. It

is important to first fully understand the public's priorities prior to developing the SWMP as opposed to presenting them with a plan and then asking what they think about it. As a result, great weight is being put on the early phase of consultation with the intention that the draft plan would consider and reflect this input from the public.

An online survey format has been found to be the most efficient and cost-effective way of conducting regional surveys. Additionally, with the reach of digital media and the internet, online surveys can connect to a greater audience.

Survey #1 has been developed using previously successful templates provided by SHA. Understanding that the Island and Mainland regions of the NCRD are two very different solid waste systems, questions have been modified to apply to both areas while still requesting the same information. The survey was created using Survey123 and is available at the following link: <https://arcg.is/88T04>.

The initial survey was sent to emails subscribed to the NCRD newsletter. In addition, it was posted to the NCRD SWMP page, the NCRD Facebook page, and several other Facebook groups that contain membership in NCRD communities. These include:

- District of Port Edward (Facebook page with 721 followers)
- Prince Rupert (private Facebook group of 3,200 members)
- Haida Gwaii Communities (private Facebook group of 1,900 members)
- Haida Gwaii Observer (Facebook page with 5,049 followers)

The survey was also distributed to local media via a news release. Newspaper outlets include:

- The Haida Gwaii Observer (online only)
- Prince Rupert Northern View.

Webpages to be contacted about displaying the surveys on their platform include:

- Council of the Haida Nation <https://www.haidanation.ca/news/>
- Lax Kw'alaams Band <https://laxkwalaams.ca/>
- Metlakatla First Nation <http://www.metlakatla.ca/>
- Gitga'at Nation <http://gitgaatnation.ca/>
- Gitxaala Nation <https://www.gitxaalanation.com/>
- Kitselas Nation <https://kitselas.com/>
- Skidegate Band Council <http://www.skidegate.ca/>
- Old Masset Village Council <https://oldmassetvillagecouncil.com/>
- Kitsumkalum Band <https://kitsumkalum.com/>
- District of Port Edward <https://www.portedward.ca/>
- City of Prince Rupert <https://www.princerupert.ca/>
- Village of Port Clements <https://portclements.ca/>
- Village of Masset <http://massetbc.com/>
- Village of Daajing Giids <https://www.daajinggiids.ca/> .



The number of households recorded for the Island area is 2,128, and 5,361 for the Mainland. At a response rate of 30%, which is considered typical for regional online surveys, the target number of household responses is 638 and 1,608 respectively.

It is envisioned that the surveys will remain open for two (2) months, after which time the submitted responses will be compiled and the data analyzed and presented to the PTAC.

From the Survey #1, there were several key findings:

- Geographic location of survey respondents (i.e., electoral area, First Nation, city, district, or village)
- Percentage of respondent's satisfaction and level of convenience with the current garbage, recycling, and organics management programs
- Percentage of respondent's desire for composting options
- Degree to which residents travel to reach solid waste facilities and how far they are willing to travel to get these services – Level of convenience
- Percentage of respondents that support a user-pay system for waste disposal
- Education and awareness level regarding collection/return to retail provided by the private sector and Extended Producer Responsibility Programs (EPR, regulated end of life management programs) in the NCRD
- Priorities for future waste management programs (i.e., cost, environmental protection, convenience, job creation, etc.)
- Support for new programs and initiatives.

The results of Survey #1 were shared with the PTAC, compiled in a Survey Summary, and widely shared with the public. Based on the Survey #1 responses, Survey #2 was built on areas of concern and further gauged support for potential initiatives presented during public consultation.

### **Phase 2 - Follow-Up Survey: Draft Solid Waste Management Plan “What do you think?” (Survey #2)**

To collect feedback from the public, a second survey was drafted and reviewed by the PTAC prior to distribution and after the draft SWMP was made available to the public. This second survey was distributed in the same way and to the same outlets as Survey #1. Results from the second survey were shared, and presented to the PTAC.

### **Phase 3 - Follow-Up Survey: Second Draft Solid Waste Management Plan “What do you think?” (Survey #3)**

To collect feedback from the public, a third survey will be drafted and reviewed by the PTAC prior to distribution and after the second draft SWMP is made available to the public. This third survey will be distributed in the same way and to the same outlets as Survey #1 and #2. Results from the third survey will be shared and presented to the PTAC and used to finalize the SWMP.

## 4 PUBLIC MEETINGS

For round one of consultation SHA recommended that three open houses and/or pop-up booths be implemented: one open house each in Masset, Daajing Giids and Prince Rupert at the end of September 2021 (19<sup>th</sup> to 23<sup>rd</sup>) and pop-up booths within the same week in all municipalities if possible.

The difference between a pre-arranged and advertised open house and a spontaneous pop-up booth is the open house is usually inside, advertisements are distributed, and story boards can be set up around the room attended by staff and consultants to receive and record input. The Masset Library, Daajing Giids Community Club and Prince Rupert Library Multi-Purpose Room were spaces that were considered useful for this type of two-to-four-hour evening event.

A pop-up booth would be spontaneous and at locations where residents frequent on a regular basis such as a grocery store over a four-to-six-hour period. The booth attendees would speak to residents as they passed by with the hope of providing information about the draft SWMP and gaining feedback and support for the initiatives portrayed on posters at the booth. This one-on-one engagement can often be just as good as a public meeting in a room of a few attendees.

SHA prepared the story boards and announcements for public distribution, attended all events and recorded input. A record of the public meetings was kept and consolidated into the final Public Consultation Report. SHA also arranged a virtual public meeting, distributed the announcement through the NCRD website and local social and regular media and presented a Power Point Presentation to the Zoom Meeting attendees.

For the second round of consultation, SHA envisions similar engagement as round one. Because attendance was considered very low, we will first consult with the PTAC members to garner ideas and suggestions to increase participation. Potential examples include the consultation team attending member municipalities' and First Nation's council meetings where the public is invited, organizing 'café talks' at several establishments with extensive pre-publication of these events, and/or attending public events that are already planned for communities such as farmers markets and festivals. The specific events will be finalized with the PTAC members and NCRD staff after release of the second draft SWMP.

It will also be important to re-engage all elected officials and stakeholders individually with a written request as soon as the second draft SWMP is released, asking them for individual feedback on the revised initiatives. It is our impression that the new initiatives will entice more input and feedback as they involve changes to services that may not be broadly palatable.

## **5 STRATEGY DECISIONS AND LEVEL OF PUBLIC SUPPORT**

It is envisioned that the results of surveys, public meetings and individually solicited feedback will help solidify the direction of the final SWMP strategies and initiatives. The feedback from the public, elected officials and stakeholders will be used to help inform the level of potential change to the solid waste management services that will be implemented over the next 10 years.

Following the final SWMP development, a Public Consultation Report will be completed outlining the steps taken to ensure adequate and effective consultation. This report will accompany the SWMP for final submission to ENV.

## **6 PLAN IMPLEMENTATION**

After the SWMP is approved by the Minister, it is recommended that a Plan Monitoring Advisory Committee (PMAC) monitor the implementation of the plan and make regular recommendations to the NCRD Board of Directors to increase Plan effectiveness.

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**APPENDIX G**  
**SWMP Monitoring Task Force Terms of Reference**

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# TERMS OF REFERENCE

## NCRD Solid Waste Management Plan Monitoring Task Force

### Task Force Role

The primary role of the Solid Waste Management Plan Monitoring Task Force (PMTF) is to advise the Regional Board on the efficient and successful implementation of the North Coast Regional District (NCRD) Solid Waste Management Plan (“the Plan”).

### Committee Structure

The PMTF will be comprised of a ‘core working group’ and a larger ‘resource group’. The core group will include NCRD staff members and at least one technical staff member from each member municipality. The resource group will include members of the core working group in addition to the following: One technical representative from First Nations; one Ministry of Environment & Climate Change Strategy representative; one member from the private composting sector; one member representing private sector waste management; two representatives from environmental and community groups; one resident of the NCRD; and one representative from the recycling industry.

### Scope

The core working group will meet on a quarterly or as needed basis to oversee and/or review all routine business related to the Plan and make recommendations to the North Coast Regional District Board. The resource group will meet at a minimum once yearly or more frequently as requested by the core group to discuss matters that are wider reaching in nature, deal with exceptional circumstances, and/or which require further consultation. All work would be carried out by Regional District staff or, or in the case of municipalities, municipal staff. The PMTF would serve to review work and provide input.

### Objectives and Tasks

1. To meet on a regular basis to discuss issues relating to Plan monitoring.
2. To review all information related to implementation of the Plan, including waste quantities, populations, and diversion rates for each Plan component.
3. To act in an advisory role during each major Plan review which will occur every five or ten years.
4. To act as a mediator in any disputes arising during implementation of the Plan that pertain to:
  - a. Interpretation of a statement or provision in the Plan or
  - b. Any other matter not related to a proposed change to the actual wording of the Plan or an operational certificate.
5. To ensure adequate public consultation in matters affecting the public, such as landfill siting, transfer station siting, etc.
6. Support municipal waste management staff recommendations to their respective councils when requested and if applicable (Plan dependent).

### **Conduct of Meetings**

The Chair will be an NCRD staff member or their duly appointed designate. The meetings will be carried out in a manner determined by the Chair. In general, the committee is to operate on a consensus basis. The Chair will have discretion as to when consensus is reached. Consensus will be formally recorded in the minutes of the meeting. In certain circumstances, issues raised during the course of a meeting may require a formal motion and vote. Agreement among committee members shall be sought whenever an agenda item is advanced as a specific recommendation to the Regional District Board of Directors. Consensus will be sought by the Chair as to whether a given issue is a voting matter.