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**REGIONAL DISTRICT OF BULKLEY-NECHAKO
WASTE MANAGEMENT COMMITTEE
(Committee of the Whole)
AGENDA**

Thursday, February 22, 2018

PAGE NO.

ACTION

CALL TO ORDER

SUPPLEMENTARY AGENDA

Receive

AGENDA – February 22, 2018

Approve

MINUTES

2-5 **Waste Management Committee Meeting
Minutes – December 14, 2017**

Receive

REPORTS

6 **Janette Derksen, Deputy Director of Environmental
Services – Vanderhoof Transfer Station Recycling
Contract Negotiations with Recycle BC**

Recommendation
(Page 6)

7-8 **Rory McKenzie, Director of Environmental Services
-RDBN Solid Waste Management Plan Advisory
Committee Recommendation - Amendment**

Recommendation
(Page 8)

9-57 **Janette Derksen, Deputy Director of Environmental
Services – Regional Solid Waste Advisory Committee
(RSWAC) Update – Work Shop #1 System Assessment
-Current Solid Waste Management Systems
-RSWAC Terms of Reference
-Minutes from the RSWAC Meeting – January 24, 2018**

Receive

58-61 **Mark Fisher, Chair – Update re: Northern Voice
-Northern Waste Diversion Position Paper – Feb 2018**

Receive

NEW BUSINESS

IN-CAMERA MOTION

In accordance with Sections 90 (1)(c) and 90 (2)(b) of the *Community Charter*, it is the opinion of the Board of Directors that matters pertaining to labour relations or other employee relations, and matters pertaining to the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party (Transportation Trade Network Analysis Study) must be closed to the public therefore exercise their option of excluding the public for this meeting.

ADJOURNMENT

REGIONAL DISTRICT OF BULKLEY-NECHAKO
WASTE MANAGEMENT COMMITTEE MEETING
(Committee Of The Whole)

Thursday, December 14, 2017

PRESENT: Chair Mark Fisher

Directors Taylor Bachrach
Chris Beach
Eileen Benedict
Shane Brienen
Tom Greenaway
Dwayne Lindstrom
Thomas Liversidge
Bill Miller
Rob Newell
Mark Parker
Jerry Petersen
Darcy Repen
Gerry Thiessen

Director Rob MacDougall, District of Fort St. James
Absent

Staff Melany de Weerd, Chief Administrative Officer
Cheryl Anderson, Manager of Administrative Services
Janette Derksen, Deputy Director of Environmental Services
John Illes, Chief Financial Officer
Rory McKenzie, Director of Environmental Services
Wendy Wainwright, Executive Assistant

CALL TO ORDER

Chair Fisher called the meeting to order at 2:48 p.m.

AGENDA

Moved by Director Repen
Seconded by Director Beach

WMC.2017-4-1

"That the Waste Management Committee receive the December 14, 2017 Agenda."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

MINUTES

Waste Management
Committee Meeting Minutes
-October 12, 2017

Moved by Director Parker
Seconded by Director Repen

WMC.2017-4-2

"That the Minutes of the Waste Management Committee for December 14, 2017 be received."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

REPORTS

Solid Waste Management Plan Summary of Work Completed

Rory McKenzie, Director of Environmental Services provided an overview of the memo titled "Solid Waste Management Plan Summary of Work Completed." Staff is currently reviewing the draft Current System Assessment Report provided by the SWMP consultants. Maura Walker, RDBN SWMP consultant attended the Recycle BC consultation process November 15-16, 2017. As a component of the public consultation process, the Solid Waste Management Plan Advisory Committee Expression of Interest Application and survey were distributed and advertised in local newspapers. Staff is currently receiving responses. Staff has provided invitations to First Nations and key stakeholders to participate on the SWMP Advisory Committee. The SWMP Advisory Committee workshop date of January 17, 2018 has been changed to January 24, 2018; allowing the consultant to provide an update to the Regional Board.

Discussion took place regarding the capacity of municipal staff to participate on the advisory committee. Mr. McKenzie commented that participants will be a cross section representation of the region and will not necessarily be from all municipalities.

Staff will provide a report to the Regional Board on January 11, 2018 to review the potential SWMP Advisory Committee members.

Solid Waste Management Plan Moved by Director Brien
Summary of Work Completed Seconded by Director Bachrach

WMC.2017-4-3

"That the Waste Management Committee receive the Director of Environmental Services' November 29, 2017 memo titled "Solid Waste Management Plan Summary of Work Completed."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

Recycle BC's Proposed Program Changes

Mr. McKenzie identified that Recycle BC's proposed changes to its curbside programs which require communities to have a minimum population of 5,000 residents will have a significant impact to the RDBN's smaller communities such as Vanderhoof. He mentioned that staff has brought the issue to the attention of Recycle BC and they have indicated they will review Vanderhoof on an individual basis.

Director Miller requested clarification regarding voluntary consolidation. Janette Derksen, Deputy Director of Environmental Services explained that communities are collecting recyclables and consolidating the material to be transported to a material recovery location. She commented that discussion has taken place in regard to communities along Highway 16 utilizing voluntary consolidation. Concerns were brought forward regarding the potential costs for smaller communities to transport recyclables for consolidation to communities to then be shipped to material recovery locations. The Solid Waste Management Plan review process will investigate options for voluntary consolidation. Recycle BC has indicated it intends to invite the RDBN to propose recommendations of locations that would be suitable for depot status such as Fraser Lake. This would allow a location for residents to bring their recyclables to a depot where curbside collection may not be an option.

Director Repen brought forward concerns regarding northern BC residents paying the same fees as residents in southern BC for product recycling and not receiving the same service levels. He noted that Recycle BC is phasing out the use of single use blue bags which is concerning. Ms. Derksen commented that single use blue bags are being phased out due to the product being non-recyclable. Discussions and feedback has taken place in regard to the blue bin and cart with lid collection systems. Director Repen spoke of the challenges associated with the cost to municipalities to purchase equipment to provide recycling services in communities. Frustrations were brought forward in regard to the inequitable administration of Recycle BC's programs to

Recycle BC's Proposed Program Changes (Cont'd)

rural BC with populations under 5000 people. Discussion took place regarding the possible collaboration between municipalities and other Regional Districts to lobby for change for equitable recycling service for rural BC residents.

Ms. Derksen noted that feedback is being collected in regard to Recycle BC's proposed program changes and the RDBN has submitted feedback through the BC Product Stewardship Council. Recycle BC has indicated that the financial changes may not be adjusted based on Recycle BC's data collection and budget being approved by its Board of Directors. The challenges and impacts of the world markets concerning recycling was discussed.

Recycle BC's incentive program for curbside and depot collection was discussed and the possibility for municipalities to collaborate to have Recycle BC collect product to transport to a material collection facility.

Discussion took place in regard to lobbying the provincial government for adequate and equitable recycling in the region. Chair Fisher spoke of the Regional Board developing strategies moving forward and collaborating with neighboring and rural Regional Districts to receive adequate service levels from Recycle BC. Director Liversidge spoke to bringing the issue forward to the North Central Local Government Association. Director Repen mentioned that in meeting with the Ministry of Environment at UBCM 2017 concerns were raised in regard to some of the stewardship programs.

Director Miller noted that the environmental handling fee that is paid by the consumer on purchased products needs to be allocated to recycling initiatives and the producers, Recycle BC and the province need to be responsible and accountable. Chair Fisher spoke of investigating options to find solutions in regard to the inadequacy of service levels in the region.

A number of stewardship programs cover the cost of transportation of their products, if this didn't take place it would be cost prohibitive in the north to transport products to material recovery facilities.

Discussion took place in regard to the transport of products for a number of stewardship programs being paid by the stewards and it would be cost prohibitive to transport products in northern B.C.

Recycle BC's Proposed Program Changes

Moved by Director Newell
Seconded by Director Repen

WMC.2017-4-4

"That the Waste Management Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to contact its solicitor to determine the legality of Recycle BC charging a fee and not providing adequate recycling service."

(All/Directors/Majority)

DEFEATED

Discussion took place in regard to contacting neighboring Regional Districts to potentially request a meeting with the Province concerning recycling initiatives in the region.

Recycle BC's Proposed Program Changes (Cont'd)

Advocacy for Recycling Initiatives

Moved by Director Bachrach
Seconded by Director Miller

WMC.2017-4-5

"That the Waste Management Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to contact the Regional District of Kitimat-Stikine and the North Coast Regional District to explore opportunities for joint advocacy in regard to recycling initiatives."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

DISCUSSION ITEM

Tipping Fees

Discussion took place in regard to reviewing tipping fees for RDBN Solid Waste Management Facilities during the Solid Waste Management Plan review process.

Tipping Fees

Moved by Director Bachrach
Seconded by Director Beach

WMC.2017-4-6

"That the Waste Management Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to discuss with Tetra Tech Canada (Consultants) to explore options in regard to tipping fees during the Solid Waste Management Plan review process."

Opposed: Director Benedict
Director Greenaway
Director Liversidge
Director Newell
Director Petersen

CARRIED

(All/Directors/Majority)

ADJOURNMENT

Moved by Director Beach
Seconded by Director Repen

WMC.2017-4-7

"That the meeting be adjourned a 3:39 p.m."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

Mark Fisher, Chair

Wendy Wainwright, Executive Assistant



**REGIONAL DISTRICT OF BULKLEY-NECHAKO
AGENDA MEMORANDUM**

WASTE MANAGEMENT COMMITTEE

To: Chairperson Fisher and Board of Directors (February 22, 2018)
From: Janette Derksen, Deputy Director of Environmental Services
Date: February 13, 2018
Subject: Vanderhoof Transfer Station Recycling Contract Negotiations with Recycle BC

The Environmental Services Department has received a formal invite from Recycle BC for their recommendation to which Recycling Depot(s) in the region would be in line to negotiate and enter into a contact agreement for funding with Recycle BC.

Staff would like to recommend that Vanderhoof Transfer Station be first choice followed by the Fraser Lake Bottle Depot and Houston Bottle Depot. Staff met with a Recycle BC Field Service Specialist on February 14th to determine how the site could be set up to follow the minimum standards as a Recycling Depot.

The Environmental Services Department would like to recommend that the Board permit staff to further investigate and negotiate a possible contract with Recycle BC to host a small scale depot at the Vanderhoof Transfer Station. Further, staff will follow up with details and cost implications to the RDBN and the Environmental Services Recycling Budget.

RECOMMENDATION	(All/Directors/Majority)
<ol style="list-style-type: none"> 1. That the Waste Management Committee receive the memorandum titled, "Vanderhoof Transfer Station Recycling Contract Negotiations with Recycle BC" dated February 13, 2018". 2. That the Waste Management Committee recommend that the RDBN Board of Directors authorize staff to further investigate and negotiate a contract with Recycle BC to host a small scale Recycling Depot at the Vanderhoof Transfer Station; and 3. That, the Waste Management Committee recommend that the RDBN Board of Directors direct staff to provide a follow-up report including the cost of a small scale Recycling Depot at the Vanderhoof Transfer Station. 	



REGIONAL DISTRICT OF BULKLEY-NECHAKO

AGENDA MEMORANDUM

To: Chairperson Fisher and Board of Directors (February 22, 2018)

From: Rory McKenzie, Director of Environmental Services

Date: February 13, 2018

Subject: RDBN Solid Waste Management Plan Advisory Committee Recommendation - Amendment

On January 23, 2018, the Regional District Board of Directors approved the recommended members for the RDBN Solid Waste Management Plan (SWMP) Advisory Committee. The Environmental Services Department would like to recommend that the RDBN Board of Directors amend the members of the committee to include David Belford, Natural Resources from the Office of the Wet'suwet'en and to change the member from the District of Vanderhoof to be Chad WestBrook, Operations Superintendent.

The recommended Updated Advisory Committee is as follows:

	Name:	Area	Sector	Function
1	Richard Burkholder	East	Rural Committee Member (Recycling)	Operations
2	Genevieve Paterson	West	Rural Committee Member	Operations
3	Garth Schienbien	Central	Rural Committee Member	Management (CNC)
4	Chad Westbrook	East (Lg)	Local Government (District of Vanderhoof)	Operations
5	Dale Ross	Central	Local Government (Village of Burns Lake)	Operations
6	Roger Smith	West	Local Government (Town of Smithers)	Operations
7	Sharon Smith	West (Sm)	Local Government (Village of Granisle)	Management
8	Dave Christie	East (Sm)	Local Government (Village of Fraser Lake)	Management
9	Bernard Patrick	Central	First Nations (Lake Babine Nation)	Management
10	Shelly Wall	Central	First Nations (Cheslatta Carrier Nation)	Management
11	Ernie French- Downey	East	Takla First Nation	Operations
12	Mickey Philips	East	Saik'uz First Nation	Operations
13	George Halem	East	Nak'azdli Whut'en First Nation	Operations
14	Trinda Elwert	East	Recycling Group	Management
15	Earnest Harding	West	Recycling Groups	Management
16	Cindi Pohl	Regional	Waste Hauler	Finance
17	Darren Wahl	Regional	Waste Hauler/Processor	Management
18	Tim Bancroft	Regional	Large Waste Producer (SD91 &54)	Management
19	TBA	Regional	Northern Health (Smithers)	Management
20	Mark Fisher	West	Rural Director	W M Committee M
21	Eileen Benedict	Central	Rural Director	W M Committee M
22	Jerry Peterson	East	Rural Director	W M Committee M
23	Jon Solecki	Regional	Agricultural Sector	Operations
24	David Belford	West	Office of the Wet'suwet'en	Management
	Rory Mckenzie	NA	Staff	Operations
	Janette Derksen	NA	Staff	Operations
	Melany DeWeerd	NA	Staff	Management

RDBN Solid Waste Management
Advisory Plan Committee Amendment
February 13, 2018



RECOMMENDATION

(All/Directors/Majority)

1. That the Board of Directors receive the memorandum titled, "RDBN Solid Waste Management Advisory Committee Recommendation – Amendment dated February 13, 2018".
2. That the Board of Directors approve the amended appointments to the Solid Waste Management Planning Advisory Committee Membership as listed in this Memorandum.



REGIONAL DISTRICT OF BULKLEY-NECHAKO

MEMORANDUM

WASTE MANAGEMENT COMMITTEE

To: Chairperson Fisher and Board of Directors (February 8, 2018)
From: Janette Derksen, Deputy Director of Environmental Services
Date: January 29, 2018
Subject: Regional Solid Waste Advisory Committee (RSWAC) Update – Work Shop #1 System Assessment

The Regional District of Bulkley-Nechako Board appointed the recommended members for the Solid Waste Management Plan's (SWMP) Advisory Committee at the January 11, 2018 Board meeting. The Regional Solid Waste Advisory Committee (RSWAC) first met January 24th in Burns Lake to discuss the Current System Assessment and to start developing options for reduction/diversion, residuals management, and special wastes in the region. The Current Systems Report that was prepared by the Solid Waste Management consultants, was distributed to the committee for their review prior to this meeting.

The following documents are attached to be received by the Board of Directors:

- The Current Solid Waste Management Systems Report – Issue for Review of the RDBN's SWMP (1996-2016).
- The Minutes from the RSWAC January 24th meeting.
- The RSWAC Terms of Reference (ToR) – approved by the committee.

The next RSWAC meeting will be held as a Webinar/teleconference on February 21, 2018 to discuss the Option Overview for the updated SWMP.

RECOMMENDATION

(All/Directors/Majority)

1. That the Waste Management Committee receive the memorandum titled, "Regional Solid Waste Advisory Committee (RSWAC) Update – Work Shop #1 System Assessment" dated January 29, 2018.
2. Further, that the Waste Management Committee receive the following: "The Current Solid Waste Management Systems", "The Minutes from the RSWAC January 24th meeting" and "The RSWAC Terms of Reference".

Current Solid Waste Management System Report



PRESENTED TO
Regional District of Bulkley-Nechako

JANUARY 2018
ISSUED FOR REVIEW
FILE: SWM.SWOP03664-01

This document has been "Issued for Review" to allow the client/design team to review and provide comments back to Tetra Tech Canada Inc. This document is subject to revision based on input received and therefore any decisions based on this unsigned document should be reviewed in relation to the subsequent "Issued for Use" document.

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EXECUTIVE SUMMARY

Tetra Tech Canada Inc., Maura Walker Environmental Consultants, and Carey McIver and Associates Ltd., (the Consulting Team) have been retained by the Regional District of Bulkley-Nechako (RDBN) to update its Regional Solid Waste Management Plan (SWMP).

The proposed 2017 SWMP update will review existing solid waste management policies and programs, identify and evaluate options for reduction and diversion, residual management, and financing, and also set the RDBN's waste management principles, targets and strategies for the next ten years.

The process to review and update the SWMP will be conducted in three stages:

- Stage 1 – the solid waste management system is assessed;
- Stage 2 – options to improve the system are developed and assessed; and
- Stage 3 – the draft plan is presented to the public for feedback and approved by the RDBN Board of Directors (the Board).

The draft plan will ultimately be submitted to the Ministry of Environment and Climate Change for approval. This current system assessment report outlines the existing solid waste management system in the RDBN. This information includes a summary of the current system, as well as an overview of the anticipated developments and trends that have been identified by the research including provincial goals and targets.

Chapter 2 of this report provides an overview of the 1996 SWMP which saw major changes in the management of solid waste in the region. The 1996 SWMP provided the basis for the current system of managing solid waste with the elimination of small historical landfills in favor of semi-regional engineered landfills. The majority of initiatives identified in the plan have been implemented or addressed by the Board since the plan was approved.

Chapter 3 of this report summarizes the current system for managing solid waste in the RDBN. This includes the sources where waste is generated, collection and depot programs that service the sources where waste is generated, the collection infrastructure for garbage and recycling, and a summary of the recycling and disposal facilities that are operated by the RDBN.

Chapter 4 of this report provides a summary of the RDBN's revenues and expenses related to managing solid waste.

Based on the inputs above, a review of previous RDBN solid waste planning documents, Ministry guidelines, overall trends in waste management and recycling (Chapter 5), and the current system reporting, a list of gaps and opportunities has been identified in Chapter 6. The list along with the provincial goals and targets identified in Chapter 7 provides the basis for the RDBN's SWMP update.

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APPENDIX SECTIONS

APPENDICES

Appendix A Tetra Tech's Limitations on the Use of this Document

ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
EMA	Environmental Management Act
EOW	Every-other-week (collection)
EPR	Extended Producer Responsibility
ICI	Industrial, Commercial and Institutional (does not include heavy industry)
Ministry	BC Ministry of Environment and Climate Change
RDBN	Regional District of Bulkley-Nechako
SWMP	Solid Waste Management Plan
WTE	Waste-to-energy

KEY DEFINITIONS

Term/Key Word	Descriptions
Advisory Committee	An advisory committee established to support the development of the solid waste management plan. Can include both a public and a technical advisory committee, or a single advisory committee to fulfil the role of both the public and technical advisory committees where a single committee better reflects the demographic or geographic nature of the regional district.

MATERIALS

Waste or Waste Material	Also known as <i>solid waste</i> . A solid matter (object) discarded by its user. All items collected for disposal and/or further processing, including solid waste bound for disposal (landfill or other), recyclables, and organics.
Disposal or Landfill Material i.e., garbage	Material that is sent to landfill or other end disposal. Reframed from 'garbage' or 'refuse' since waste characterization studies generally show up to 90% of this stream can be recycled or composted.
Organic Material	Also known as <i>organics</i> . Decomposable, compostable matter that can be safely managed through an organics processing facility (e.g., composting and anaerobic digestion) to produce energy and/or compost, a soil amendment. Examples include: food scraps, food-soiled paper, and leaf and yard debris.
Source Separated Organics (SSO)	Organic material that is sorted (separated), at its point of generation, from all other material streams. This includes all compostable materials that are collected in designated containers bound for organics processing.
Recyclable Material	Also known as <i>recyclables</i> . Material that can be reprocessed to create a new product; such materials include: beverage containers, paper, cardboard, glass, light metals, and plastics.



LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of the Regional District of Bulkley-Nechako and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Regional District of Bulkley-Nechako, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in the Appendix or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION

Tetra Tech Canada Inc., Maura Walker Environmental Consultants, and Carey McIver and Associates Ltd., (the Consulting Team) have been retained by the Regional District of Bulkley-Nechako (RDBN) to update its Regional Solid Waste Management Plan (SWMP).

In 1989, the Waste Management Act [now the Environmental Management Act (EMA)] was amended to require all regional districts to prepare and submit solid waste management plans to the British Columbia Ministry of Environment (Ministry) for approval by the year 1995. The purpose of the SWMP is to provide the RDBN with a guiding document that will direct the Region's solid waste management activities over the next 5 to 10 years. The intention of the SWMP is a planning document that outlines a framework for managing solid waste in their region, keeping in mind local circumstances, community goals, disposal capacity, environmental protection, community support, operational capacity and financial sustainability.

Significant changes have occurred both within the RDBN's solid waste management programs and larger provincial regulations which significantly influence the regional solid waste management system. The RDBN's current waste management plan was prepared in 1996 and requires updating. The process to update the plan will review existing solid waste management policies and programs, identify and evaluate options for reduction and diversion, residual management, and financing, and also set the RDBN's waste management principles, targets and strategies for the next ten years.

The process to review and update the SWMP will be conducted in three stages:

- Stage 1 – the solid waste management system is assessed;
- Stage 2 – options to improve the system are developed and assessed; and
- Stage 3 – the draft plan is presented to the public for feedback and approved by the RDBN Board of Directors (the Board).

This current system assessment report outlines the existing solid waste management system in the RDBN. This information includes a summary of the current system, as well as an overview of the anticipated developments and trends that have been identified by the research, including provincial goals and targets.

1.1 Guiding Principles

In May 2016, the Ministry released new Guidelines for the Development of SWMPs. These guidelines will be used to assist with the update of the RDBN SWMP.

According to the Ministry's guidelines, the SWMP should be founded on locally-relevant guiding principles, which are clearly stated in the plan. These principles will be developed in consultation with an advisory committee and also factor in provincial guiding principles as listed below. If the provincial guiding principles are modified or not included, a clear rationale for these decisions should be provided to the Ministry.

1. Promote zero waste approaches and support a circular economy.

Encourage a shift in thinking from waste as a residual requiring disposal, to waste as a resource that can be utilized in closed-loop systems. Zero waste approaches aim to minimize waste generation and enable the sustainable use and reuse of products and materials. At the local level, look to remove barriers or encourage opportunities that will contribute to towards the establishment of a circular economy.

2. Promote the first 3 Rs (Reduce, Reuse and Recycle).

Elevate the importance of waste prevention by prioritizing programming and provision of services for the first 3 Rs in the 5 R waste management hierarchy (see Figure 1-1). Encourage investments in technology and infrastructure, and ensure they occur as high up on the hierarchy as possible.



Source: (BC Ministry of Environment, n.d.¹)

Figure 1-1: The Pollution Prevention Hierarchy

3. Maximize beneficial use of waste materials and manage residuals appropriately.

Technology, best practices and infrastructure investments should continue to develop to recover any remaining materials and energy from the waste stream, and to manage residuals for disposal.

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

Producer and user responsibility for the management of products can be supported through the provision of market-based incentives, disposal restrictions on industry-stewarded products, zoning to support collection facilities, and support for reuse and remanufacturing businesses. Education and behaviour change strategies aimed at consumers and businesses will help foster further waste reduction, reuse and recycling. For example, user fees can be managed as incentives to increase waste reduction and diversion.

5. Prevent organics and recyclables from going into the garbage wherever practical.

Maintaining a system to prevent organics and recyclables from going into the garbage will provide clean feedstock of greater economic value as well as a potential end product use to the recycling industry, while reinforcing behaviour to reduce, reuse and recycle. Innovation in separation solutions, establishment and enforcement of disposal restrictions or other creative means will influence this approach.

6. Collaborate with other regional districts wherever practical.

Collaboration on many aspects of solid waste management (e.g., to access facilities and markets, share campaigns and programs) will support the most efficient and effective overall municipal solid waste system.

¹ <http://www2.gov.bc.ca/gov/content/environment/waste-management/zero-waste>

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

Strengthen partnerships with interested parties to achieve regional targets. All waste and recycling service providers, industry product stewards and waste generators are key interested parties in achieving these targets. Cooperative efforts will optimize successful outcomes. Encourage a marketplace that will complement stewardship programs and drive private sector innovation and investment towards achievement of targets.

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

Solid waste management facilities within a given region should be subject to similar requirements. A consistent set of criteria should be used to evaluate the waste management solutions proposed by private sector and by a regional district or municipality

2.0 BACKGROUND

The RDBN has made significant headway on managing solid waste more responsibly since the first SWMP was established in 1996. This section summarizes the history of solid waste management planning in the RDBN and the implementation status of the 1996 Plan.

2.1 Plan History

The RDBN's original 1996 SWMP transformed solid waste management in RDBN from many small disposal sites to two sub-regional landfills and one small modified landfill supported by a series of local transfer stations. In 2008, the RDBN commissioned a Stage 1 report to assess the solid waste management system. At that time they decided to continue work on implementing the original SWMP instead of completing Stage 2 and Stage 3 of a full SWMP update since the completion of key items from the 1996 SWMP were in progress and no additional options could be accommodated by available resources.

The 1996 SWMP defined the following goal and objectives for solid waste in RDBN:

- **Plan Goal** – The overall goal of the plan is to provide for the most environmentally safe and economically feasible method of managing our solid waste.
- **Plan Objectives** – Regional objectives are to be reflected in the specific policies or strategies of the plan. During Stage 1, the planning process developed specific objectives as follows:
 - That the weight of solid waste per capita requiring disposal be reduced (using the volumes in 1990 as our standard) by using the most environmentally and economically efficient methods acceptable to the taxpayer and that the suggested reduction of 30% by 1998 and 50% by the year 2000 be used as a method of judging our efforts;
 - That this reduction be achieved through sequential strategies of reduction, reuse, recycling and composting;
 - That the SWMP identify problems with the present disposal system and supply possible solutions; and
 - That the SWMP be funded through an appropriate mix of user-pay and taxation mechanisms.

A number of the initiatives identified in the 1996 SWMP have been completed or are currently being carried out. Table 2-1 summarizes the options identified in the plan and implementation progress at the time of writing.

Table 2-1: Summary of 1996 SWMP Completion Status

Option	Status	Notes
Reduction and Reuse Programs – 12.5% Diversion Anticipated		
<i>Objective: To reduce and reuse the amount of waste generated as much as is practically possible.</i>		
Education/media campaign.	Partially complete	Some education and outreach programs are in place. All major solid waste facilities are listed on the RDBN website and regional recycling brochures.
Tipping fees and variable rate charges.	Complete*	Tipping fee changes have been considered but not changed. RDBN staff completed studies in 1999 and 2004 to assess options for tipping fees. Implementation of tipping fees was discussed in Inter-Municipal, RDBN Board, and APC meetings in 1998 and 1999. The RDBN Board has deferred implementation of tipping fees for municipal solid waste but has approved fees for specific materials. Materials with tipping fees include special materials (construction and demolition), specified materials (specified risk materials, asbestos, appliances containing ozone depleting substances), and contaminated soils.
Tag-bag charges.	Complete*	RDBN does not charge for residential waste dropped-off at regional facilities. Bag tagging was considered as an option in the 1999 User-Pay Implementation System study completed by RDBN staff. Some municipalities (Burns Lake, Telkwa, and Smithers) have instituted variable rates for garbage collection and limits on disposal where cart-based collection is in place.
Waste reduction plans/waste audit manuals.	Not complete	No audit guides have been provided by RDBN to institutions or businesses to support diversion.
Reuse facilities at landfills and transfer stations.	Complete.	Reuse sheds have been developed at all public landfills and transfer stations.
Political initiatives.	Complete	RDBN has contributed to lobbying and communication with senior levels of government.
Community group initiatives.	Complete	RDBN has provided information and grants to non-profit groups to promote waste reduction.
Recycling – 8% to 14% Diversion Anticipated		
<i>Objective: To support recycling as a viable method of reducing solid waste going to landfills provided that it is economically viable.</i>		
Residential recycling (sub-regional or region-wide).	Complete	Limited recyclable materials are accepted at RDBN-operated public solid waste facilities (landfill and transfer stations) including metals, propane tanks, and limited household recycling (mixed paper, mixed containers). The compactor units envisioned for drop-off depots have not been installed. Curbside recycling for the residential sector is available in Smithers, Telkwa, and Fort St. James. Private depots exist in most communities supported by EPR organizations (Encorp, Product Care, Recycle BC, etc.).
Commercial recycling.	Complete	Cardboard recycling was stimulated through the 2016 cardboard ban from landfills and transfer station tipping floors. RDBN provides commercial recycling bins at a number of locations in the region.
Ferrous metals and white goods recycling.	Complete	RDBN stockpiles these materials separately from the garbage stream for future recycling at all solid waste facilities it operates.
Composting – 1% Diversion Anticipated		
<i>Objective: To encourage composting as a method for waste reduction.</i>		
Backyard composting.	Complete	RDBN sells subsidized backyard composters to the community.
Centralized yard waste composting.	Complete	RDBN is working with local community gardens to support composting. Yard waste is collected for composting at all transfer stations. Food waste is not targeted as key material stream within this program.

Option	Status	Notes
Residuals Management		
Objective: To operate all regional landfills in accordance with BC Environment's Landfill Criteria for Municipal Solid Waste, June 1993.		
Closure of landfills** and replacement with transfer stations.	Partially complete	Closure operations have been completed but must be reviewed by the Ministry of Environment and Climate Change Strategy (Ministry). The RDBN will work with the Ministry to assess abandonment of historical disposal site permits.
Operation of two sub-regional engineered landfills and Manson Creek Landfill to meet Landfill Criteria.	Complete	Operations are underway at the RDBN's three remaining landfills.
Development of a transfer station network to replace closed landfills.	Complete	Transfer stations have been developed on many historical landfill locations.
Problem Wastes		
Objective: To manage all problem wastes in an environmentally safe yet economic manner.		
Household Hazardous Waste program support and lobbying.	Partially Complete	Regeneration (Product Care Association) currently manages most typical household hazardous waste products and supports several depots in the region.
Investigate alternative methods for managing wood waste.	Complete*	RDBN has considered alternative methods but has not identified any long-term economically feasibility management technique.
Accept animal carcasses at landfill sites for a fee.	Complete	Procedures are in place to manage landfill disposal of specified risk material from local slaughter houses and hunting.
Ban tires for landfill sites and transfer stations.	Complete	Tires are not disposed in the landfill or accepted at transfer stations. Local tire shops are responsible for collecting and recycling tires.
Financing		
Financing the system through user-pay (70%) and taxation (30%).	Complete*	Currently the majority of the system is financed through taxation.
Administration		
Objective: To coordinate policies of this plan with other interested stakeholders.		
RDBN is responsible for reduction, reuse, recycling, and composting, waste transfer and disposal.	N/A	RDBN manages solid waste in the region provides oversight of recycling, which is offered by a mixture of public and private entities.
A permanent Plan Monitoring Advisory Committee should ensure that the plan is implemented.	N/A	The board's solid waste committee monitored progress on the plan initially but was not maintained long term.
The plan should be subject to annual reviews and a major review every five years.	Partially Complete	Internal annual reviews of the plan have occurred but only one addendum was officially completed. A major review has not occurred since plan creation in 1996.
RDBN will encourage communication among all stakeholders affected by the plans.	Partially Complete	Some amount of communication occurs between RDBN and stakeholders but no consistent forum has been created to foster regular stakeholder communication.
Staffing may include a waste management coordinator/planner and a field services supervisor.	Complete	Historically staffing levels in the Environmental Services department have included sufficient resources to support ongoing operations.
* Topic has been addressed by the Board but implementation has been deferred or cancelled.		
** Inactive landfills closed following the 1996 SWMP include Vanderhoof Landfill, Fort St. James Landfill (Photo 2-1 and Photo 2-2), Fraser Lake Landfill, Fort Fraser Landfill, Ootsa Lake Landfill, Burns Lake Landfill, Granisle Landfill, Smithers Landing Landfill, Old Smithers Landfill, Smithers/Telkwa Landfill, Endako Landfill, Cluculz Lake Landfill, Francois Lake, Grassy Plains Landfill, Southbank Landfill, Tatalrose Landfill, Topley Landing Landfill, Topley Landfill, Perow Landfill, Palling Landfill and Houston Landfill.		



Photo 2-1: Historical Fort St. James Landfill Prior to Closure (photo by RDBN 2009)



Photo 2-2: Closure of Historical Fort St. James Landfill (photo by RDBN 2010)

2.2 Plan Area

The 1996 SWMP covered the entire territory of RDBN. RDBN includes the Town of Smithers, the Districts of Vanderhoof, Fort St. James and Houston, the Villages of Fraser Lake, Burns Lake, Granisle, Telkwa, the unincorporated community of Fort Fraser, and Electoral Areas A, B, C, D, E, F and G, as shown in Figure 2-1.

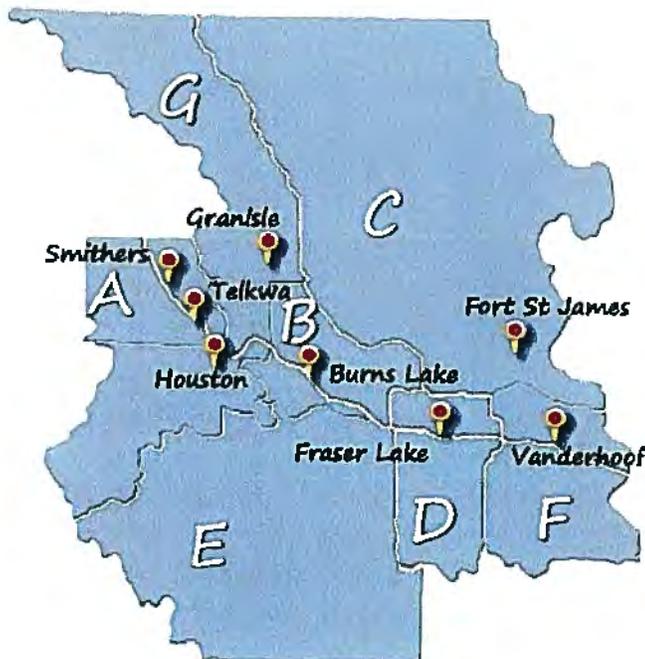


Figure 2-1: RDBN Plan Area²

² RDBN Map available via RDBN website <https://www.rdbn.bc.ca/>

2.3 Demographic Information

The RDBN has seen an overall decrease in population since the 1996 SWMP was developed, as presented in Table 2-2. Data from Statistics Canada indicates that the Region's population has decreased slightly from 41,642 in 1996 to 37,896 in 2016, an average decrease of approximately 0.45% per year. This population decrease was most significant in rural areas.

Table 2-2: Regional Demographic Information

Demographic Measure	Reported by Statistics Canada ³
Population, 2016	37,896
Population, 2011	39,208
Population, 2006	38,243
Population Change, 2011 to 2016	-3.3%
Population Change, 2006 to 2016	0.9%
Total private dwellings, 2016	17,564
Private dwellings occupied by usual residents, 2016	15,101

The population of RDBN is spread over the region's 73,000 square kilometers, with the majority of the population clustered along the Highway 16 corridor. The region's largest population centers are Smithers in the West and Vanderhoof in the East.

The Statistics Canada data does not include the First Nations population which was estimated at 2,826 in the 2016 census. Table 2-3 summarizes community and electoral area populations based on 2016 census data from Statistics Canada and 2017 First Nations populations living on reserve based on RDBN service agreements which estimate First Nations population.

Table 2-3: Populations of Regional Electoral Areas and Municipalities

Community	Population 2016 ⁴	Estimated First Nations Population ⁵
Electoral Area A (Smithers Rural)	5,256	45
Electoral Area B (Burns Lake Rural)	1,938	1,671
Electoral Area C (Fort St. James Rural)	1,415	1,854
Electoral Area D (Fraser Lake Rural)	1,472	599
Electoral Area E (Francois/Ootsa Rural)	1,593	192
Electoral Area F (Vanderhoof Rural)	3,665	495
Electoral Area G (Houston Rural)	903	-
Town of Smithers	5,401	-
Village of Telkwa	1,327	-

³ Statistics Canada 2016 Census Profile – Regional District Bulkley-Nechako <http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>

⁴ Population estimates based on Statistics Canada 2016 Census Profiles <http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E&TABID=1>

⁵ First nation populations living on reserve in 2017 estimated based on existing service agreements between the region and first nations.

Community	Population 2016 ⁴	Estimated First Nations Population ⁵
District of Houston	2,993	-
Village of Granisle	303	-
Village of Burns Lake	1,779	-
Village of Fraser Lake	988	-
District of Vanderhoof	4,439	-
District of Fort St. James	1,598	-
Unincorporated Community of Fort Fraser	275	-

2.3.1 Economic Information

RDBN has a varied economy located within 8 unique municipalities, 7 electoral areas, and 13 First Nations. Income distribution in the region is similar to the province as a whole with proportionally more middle and higher income individuals than average. Manufacturing and agriculture/forestry/fishing/hunting were the leading sources of employment in 2011; both of these industries employed a greater proportion of the labour force than anywhere else in Northern British Columbia.

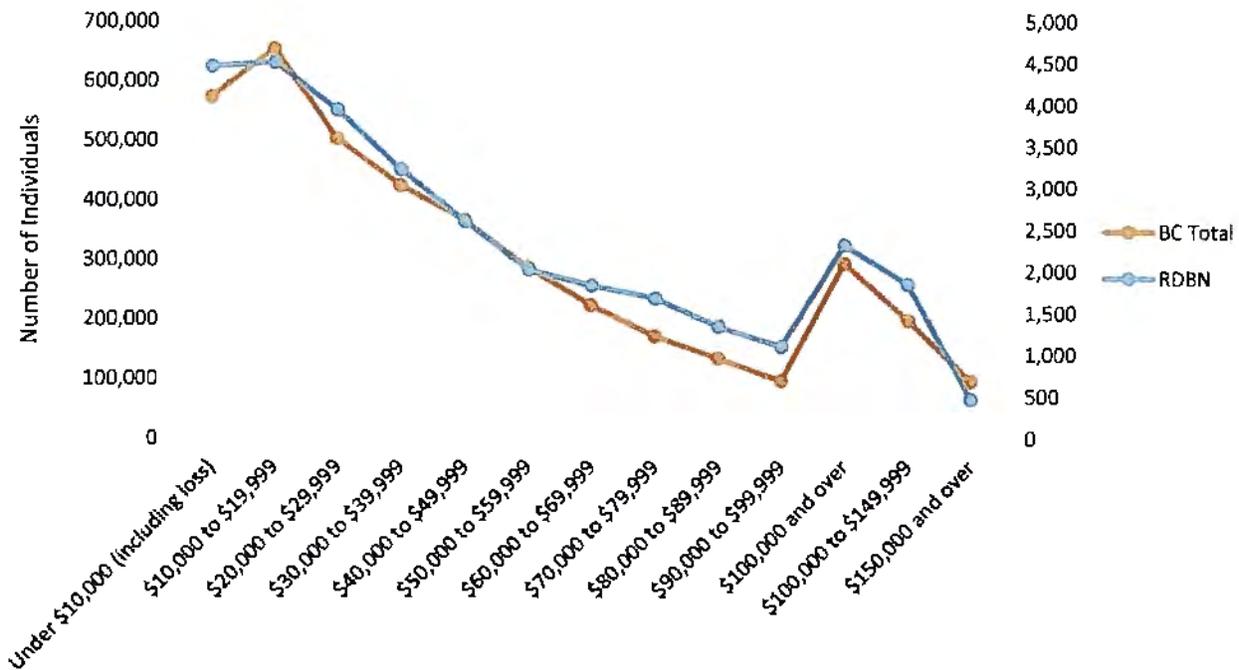


Figure 2-2: Individual Income (Before Tax) in 2015 (Statistics Canada 2016)

2.4 System Data

This section provides general data associated with the performance of the existing system, including the quantity of waste disposed and the types of waste disposed.

2.4.1 Disposal Data

Figure 2-3 presents the total annual municipal solid waste disposed in RDBN landfills. Municipal solid waste is made up of refuse from residential and industrial, commercial and institutional (ICI) sources, as well as construction and demolition (C&D)/wood waste generated from construction, demolition, and land clearing projects.⁶ The overall quantity of waste disposed over the past five years has been fairly consistent. The most significant variations are the quantities of C&D waste, as shown in orange in Figure 2-3. It is common for C&D waste quantities to vary annually due to varying levels of construction or demolition activities.

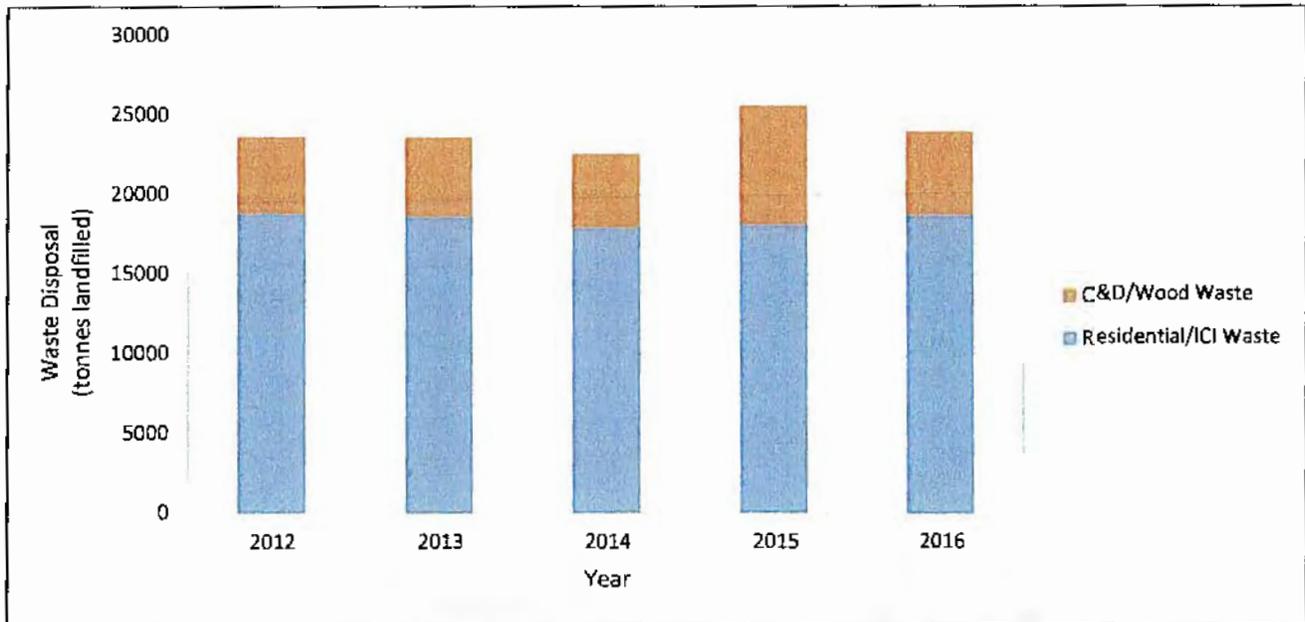


Figure 2-3: RDBN Waste Disposal (tonnes landfilled) 2012-2016

The Ministry requests that all British Columbia regional districts report the waste disposed annually; the Ministry then reports on the quantity of waste disposed by each regional district on a per capita basis.

As shown in Figure 2-4, the average disposal rate in British Columbia in 2015 was 497 kg per capita, with the highest per capita disposal rates found in northern British Columbia. These higher disposal rates in the north are due to a number of factors:

- Lack of waste diversion opportunities;
- Low cost of waste disposal (and lots of landfill capacity); and
- Growth of oil and gas industrial activity in British Columbia's north, and the associated personnel creating waste which is disposed in local landfills.

⁶ RDBN landfills also receive a small volume of Specified Risk Material from deceased cattle (roughly 150 tonnes per year). This type of waste is not considered municipal solid waste and has not been included in the annual solid waste disposal data.

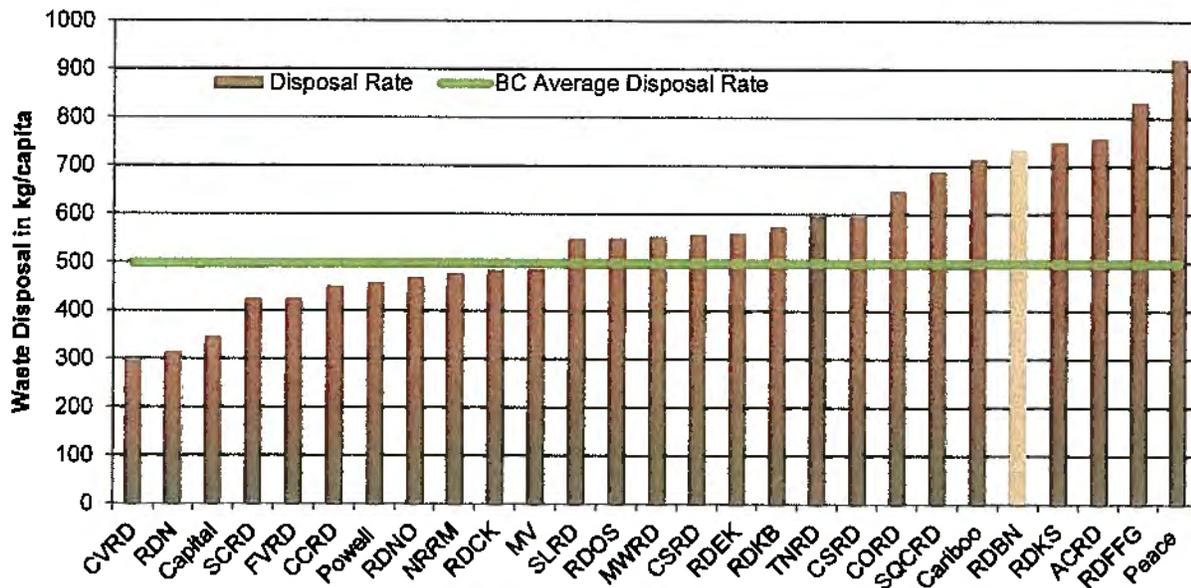


Figure 2-4: 2015 Disposal Rate by Regional District

For comparative purposes, the per capita disposal rate for RDBN and neighbouring regional districts is provided in Table 2-4.

Table 2-4: Comparison of Per Capita Disposal Rate

Regional District	2015 per Capita Disposal Rate (kg) ⁷
Bulkley-Nechako	777
Fraser-Fort George	833
Kitimat-Stikine	750 (estimated)
Peace River	922
Cariboo	714

⁷ Data source: <http://www.env.gov.bc.ca/soe/indicators/sustainability/municipal-solid-waste.html>
At the time of writing, 2015 is the most recent year that disposal data is published.

2.4.2 Waste Composition

In 2008, RDBN conducted a waste composition study to determine the types of products and materials that are being landfilled⁸. This type of information assists in identifying potential opportunities to reduce the amount of waste being landfilled. Figure 2-5 presents the results of this study. The largest (by weight) component of what is landfilled is organic waste (37%), which includes food waste, yard waste and compostable paper products like paper toweling and tissues. The next largest component is paper (20%) such as cardboard, newspaper, office paper and magazines. The third largest is plastic (13%), including plastic containers, film plastic (e.g., bags) and rigid plastic items (chairs, toys, etc.).



Photo 2-1: Garbage Disposed at Clearview Landfill (photo by Tetra Tech 2017)

Since this study was undertaken, RDBN has banned cardboard and metal from disposal as garbage and, as a result, as shown in Photo 2-1 it is likely that the proportion of paper and metal in the waste stream is currently less than shown in Figure 2-5.

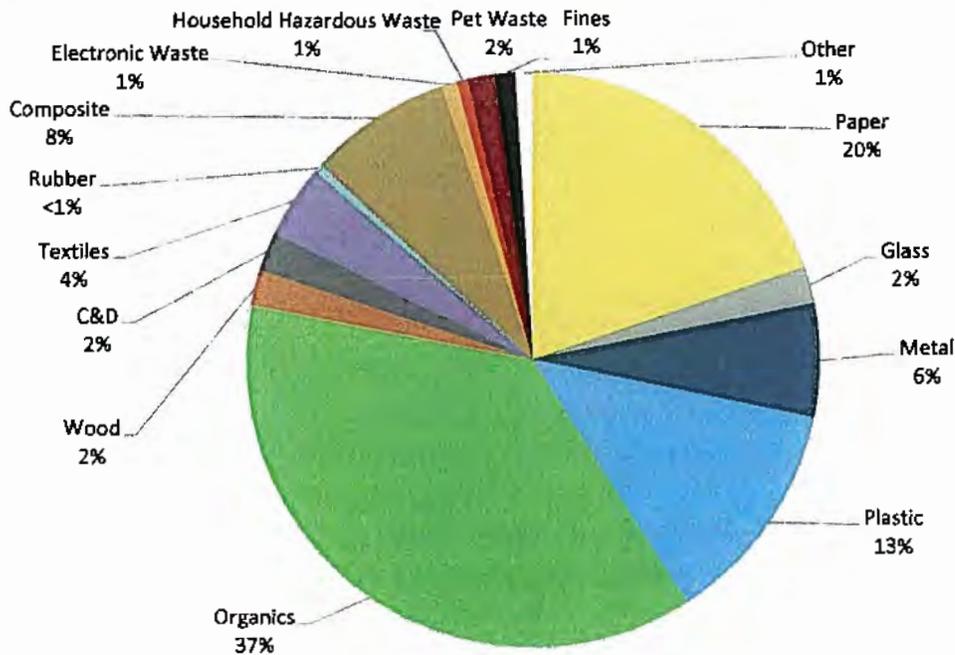


Figure 2-5: RDBN Waste Composition, By Weight (2008)

⁸ Gartner Lee Limited. *RDBN Waste Composition Study Memorandum*. 2008.

2.5 Facility and Services Summary

The solid waste management system in RDBN includes a number of public and private facilities. RDBN operates the majority of solid waste transfer and disposal facilities in the region. Many of the RDBN facilities include diversion and reuse services, including yard waste composting, scrap metals recycling, reuse sheds, and some household recyclable collections. The Takla First Nation also operates a small transfer station in the community of Takla Landing that currently only accepts garbage for transfer to landfill. A number of private recycling facilities are operating in the region with varying levels of financial support from RDBN and EPR organizations. With the exception of the Manson Creek Landfill, all solid waste transfer and disposal facilities are staffed during operating hours. The facilities and services offered are described in the following sections.

2.5.1 Collection Operations

Collection of solid waste in the region is managed by individual municipalities and businesses. The larger municipalities in the region provide curbside collection of garbage with a number mandating a minimum "non-subscription" fee to cover base administrative costs even when residents choose to opt out of collection. Private haulers offer curbside collection by subscription in many areas where it is not offered by municipal governments.

Table 2-5 presents the availability of curbside collection programs in each municipality in RDBN.

Table 2-5: Curbside Collection Programs by Municipality

Municipality	Total Households (StatsCan 2016)	Curbside Collection Availability	
		Garbage	Recycling
Town of Smithers	2,389	EOW*	EOW*
Village of Telkwa	539	Weekly	EOW*
District of Houston	1,402	Weekly	N/A
Village of Granisle	176	Weekly	N/A
Village of Burns Lake	748	Weekly – Residential Twice Weekly – ICI	N/A
Village of Fraser Lake	551	Weekly	N/A
District of Fort St. James	761	Weekly	EOW*
District of Vanderhoof	850	Weekly	N/A
Electoral Areas	7,892	N/A	N/A

* EOW – Every Other Week

** N/A – Collection is not managed provided by government but is available by subscription with private haulers in most non-remote areas.

Municipally and privately collected garbage is unloaded at the local landfill or transfer station for no fee. Material collected curbside is taken to transfer stations where it is consolidated into trailers with the garbage dropped off by residents, and hauled to one of the RDBN's sub-regional landfill facilities: Knockhoft and Clearview Landfills.

2.5.2 Transfer Stations

The RDBN operates seven transfer stations in the region that are used by both residents and private haulers. Garbage is consolidated and transported for disposal at Knockholt or Clearview Landfill. Photos 2-4 to 2-7 show facilities at three of the RDBN's transfer stations.

Table 2-6: Summary of RDBN Transfer Stations

Transfer Station	Facility Type	Communities/Areas Served
Smithers/Telkwa Transfer Station	Building/Tipping Floor	Area A, Smithers, Telkwa
Granisle Transfer Station	Transtor Bin (1 X 50 yard ³)	Granisle
Burns Lake Transfer Station	Building/Tipping Floor	Area B, Burns Lake
Fort St. James Transfer Station	Building/Tipping Floor	Area C, Fort St. James
Area D Transfer Station – Fraser Lake Rural	Transtor Bin (3 X 50 yard ³)	Area D, Fraser Lake, Fort Fraser
Southside Transfer Station	Transtor Bin (2 x 40 yard ³)	Area E
Vanderhoof Transfer Station	Building/Tipping Floor	Area F, Vanderhoof



Photo 2-4: Vanderhoof Transfer Station Building
 (photo by Tetra Tech 2017)



Photo 2-5: Vanderhoof Transfer Station Signage
 (photo by Tetra Tech 2017)



Photo 2-6: Smithers Transfer Station Trailer
 (photo by Tetra Tech 2017)



Photo 2-7: Area D (Fraser Lake) Transfer Station Bins
 (photo by Tetra Tech 2017)

In most instances, garbage is hauled directly from the transfer station to one of the region's two sub-regional landfills (Knockholt and Clearview Landfills). However, in order to increase transfer efficiency, garbage from small transfer stations is hauled to larger transfer facilities for consolidation and long-haul transfer to landfill (e.g., garbage from Southside Transfer Station and Granisle Transfer Station is hauled to Burns Lake Transfer Station and subsequently to Knockholt Landfill).

2.5.3 Landfills

The Region operates two engineered sub-regional landfills. A third small landfill (Manson Creek) exists in the northwest corner of Area C to serve local populations. These landfills are summarized in Table 2-7.

Table 2-7: Summary of RDBN Landfills

Landfill and Location	Communities/Areas Served
<p>Knockholt Landfill Located approximately 12 km southeast of Houston, on Aitken Road on lands legally described as District Lot 8044, Range 5.</p>	<p>Western Region Burns Lake, Granisle, Houston, Telkwa, Smithers, Electoral Area A, Electoral Area B, Electoral Area E, Electoral Area G</p>
<p>Clearview Landfill Located approximately 22 km north of the intersection of Highway 16 and Highway 27. The legal description of the property is unsurveyed Crown land in the vicinity of Clear Creek, North of Section 36, Township 18, Range 5.</p>	<p>Eastern Region Vanderhoof, Fort St. James, Fraser Lake, Electoral Area C, Electoral Area D, Electoral Area F</p>
<p>Manson Creek Landfill Located approximately 6 km north-northwest of Manson Creek, British Columbia at km 65.5 on the Finlay-Manson Forest Service Road. Landfill is operated on unsurveyed Crown Land at a site located at the following coordinates, Latitude 55° 42' 45" northerly and Longitude 124° 30' 45" westerly.</p>	<p>Northeast Manson Creek</p>

RDBN conducts regular environmental monitoring of active and closed landfills to confirm that no contaminants are migrating off site onto adjacent properties. Groundwater is monitored at locations hydraulically up gradient and down gradient of landfill areas and surface water in adjacent streams is sampled upstream and downstream of the facility. Active landfills are monitored quarterly while historical landfills are monitored twice per year, except the Manson Creek Landfill, which is monitored annually.

2.5.3.1 Knockholt (Western Sub-region) Landfill

The Knockholt sub-regional landfill is the largest and most sophisticated of the RDBN's landfills. Table 2-8 summarizes the materials received at the Knockholt landfill over the past five years.

Table 2-8: Solid Waste Materials Received at the Knockholt Landfill

Solid Waste Material Received	2012 Tonnage (tonnes)	2013 Tonnage (tonnes)	2014 Tonnage (tonnes)	2015 Tonnage (tonnes)	2016 Tonnage (tonnes)
Garbage	11,507	11,458	11,034	11,125	11,813
C&D Waste	2,102	1,904	2,037	3,905	2,509
Wood Waste	1,095	1,279	1,165	2,629	2,189
Specified Risk Material	8	7	1	30	8
Total Material Received	15,751	17,689	14,759	14,648	14,712

The permitted area of the Knockholt landfill is 33 hectares comprising four phases:

- Phase 1: Previous landfilling area. Constructed with a native clay liner with a leachate toe drain. Partial closure has been completed in this area to minimize infiltration and shape slopes.
- Phase 2: Current landfilling area. Constructed with a native clay liner, stone drains, central leachate collection pipe, and a leachate tie drain.
- Phase 3 and Phase 4: Future landfilling areas. Will be constructed with an engineered liner and leachate collection system.

The facility was converted from a local disposal site to an engineered sub-regional landfill in 1998 as part of the region's first SWMP (1996). Surface water is controlled with a perimeter berm and culverts that drain to a natural surface water pond area north of the existing landfilling area. An engineered wetland was constructed in 2007 to treat leachate generated by the landfill. Leachate is siphoned from a lined storage lagoon to a constructed wetland for treatment where it is eventually released northeast of the active fill area to natural areas down gradient of the site. Landfill operations are shown in Photo 2-8 with the leachate pond shown in Photo 2-9.



Photo 2-8: Knockholt Landfill Active Face (photo by Tetra Tech 2017)

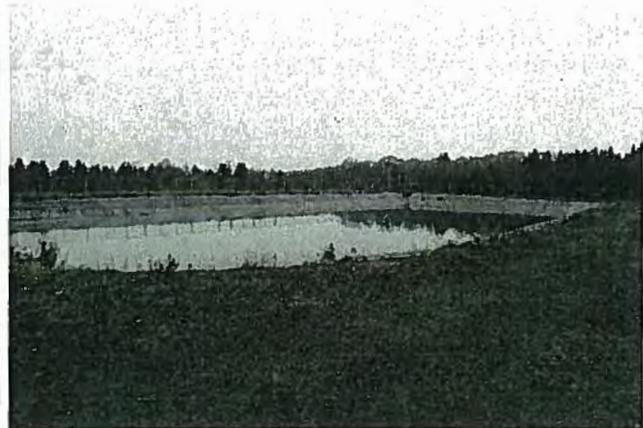


Photo 2-9: Knockholt Landfill Leachate Pond (photo by Tetra Tech 2017)

In addition to landfilling, the operating certificate allows composting of organic waste, including untreated wood waste and air-curtain burning of selected combustibles.

Quarterly groundwater and surface water monitoring is conducted at the site to ensure that no contaminants are migrating off site. The Ministry has identified the need to update the groundwater monitoring plan to provide coverage for the newly constructed landfill cell (Phase 3a) opened in 2017.

2.5.3.2 Clearview (Eastern Sub-region) Landfill

Clearview is the smaller of the sub-regional landfills. It was built to replace a number of smaller sites following the 1996 SWMP. Table 2-9 summarizes the materials received at the Clearview landfill over the past five years.

Table 2-9: Solid Waste Materials Received at the Clearview Sub-regional Landfill

Solid Waste Material Received	2012 Tonnage (tonnes)	2013 Tonnage (tonnes)	2014 Tonnage (tonnes)	2015 Tonnage (tonnes)	2016 Tonnage (tonnes)
Municipal Solid Waste Generation	7,283	7,161	6906	6,991	6,928
C&D Generation	1,611	1,769	1403	928	1,298
Specified Risk Material Generation	157	156	156	132	156
Total Landfilled	9,051	9,086	8465	8,051	8,383

Siting for an eastern sub-regional landfill began in 1999, with construction completed in 2007. The detailed siting study and public consultations identified the Clearview sub-regional landfill site to the west of Highway 27 as the preferred location for the landfill facility. Due to its proximity to two nearby transfer stations, the Clearview sub-regional landfill is not open to residential drop-off and does not handle any recyclable materials other than segregated wood loads. Landfill operations are shown in Photo 2-10 and Photo 2-11.

The facility was originally designed to allow for over 100 years of airspace using conservative calculations as identified in the 2003 Design, Operations & Closure Plan (Gartner Lee Limited, 2003). Subsequent design updates identified additional site capacity through design change. According to the 2013 XCG design report, the landfill's Phase 1 development area has sufficient airspace to last until 2027 based upon conservative estimates, which is approximately 12 years longer than the original Design, Operations & Closure Plan estimate of 2015.

The permitted area of the Clearview landfill includes four phases within the existing fence line with additional "future landfill" space to the west of the fence line.



Photo 2-10: Clearview Landfill Active Face (photo by Tetra Tech 2017)



Photo 2-11: Clearview Landfill Wood Burning Area (photo by Tetra Tech 2017)

Surface water is controlled via perimeter ditching along the access road surrounding the Phase 1 development area of the landfill. Surface water is conveyed through ditches and culverts to a constructed storm water management pond at the northeast corner of the fenced site. Leachate is contained within temporary berms and is expected to infiltrate through the natural soils underlying the site. Various leachate breakouts have been noted in Phase 1 in previous years. The majority of these breakouts have been mitigated by removing large debris placed at the surface

of the waste mass directly adjacent to the cover material. The number and severity of leachate breakouts will continue to be monitored.

Excess water that comes into contact with the active face of the landfill (contact water) flows into a low ponding area at the north edge of Phase 1 (contact water pond), where it eventually infiltrates the underlying soil and is expected to be naturally attenuated. Significant accumulation of liquid in this area previously required controlled discharges in spring. RDBN staff are working with MOE and consultants to manage and mitigate issues.

A leachate collection and treatment system may be required if issues persist with leachate breakouts and contact water pond capacity. To further mitigate leachate production and erosion in future, RDBN will complete partial closure of Phase 1 in 2018. The constructed final cover will include compacted clay and topsoil seeded with low maintenance vegetation suitable for local conditions.

Quarterly groundwater and surface water monitoring is conducted at the site to ensure that no contaminants are migrating off site.

2.5.3.3 Manson Creek Landfill

The Manson Creek Landfill is a natural attenuation landfill located on unsurveyed crown land at km 65.5 on the Finlay-Manson Service Road. The site has been operated by a local contractor as an unattended trench landfill since 1987. The site is fully secured with a perimeter electrified fence to limit animal attraction. Garbage is compacted and covered at least once per month from June to October. Wood and scrap metals are collected on site in separate piles.

3.0 CURRENT SOLID WASTE SYSTEM

Figure 3-1 outlines the key components of RDBN's solid waste management system, including waste prevention, waste generation, collection, recycling and disposal. This section of the report describes the associated services, programs, infrastructure and policies that are associated with these system components.



Figure 3-1: Components of the Waste Management System

3.1 Waste Prevention

Initiatives that reduce the amount of waste produced, or that encourage items to be reused rather than discarded, serve to decrease the amount of waste that needs to be collected and managed through waste diversion and disposal services.

Backyard composting is a means of waste reduction used by many communities to reduce the quantity of organic waste disposed. RDBN promotes backyard composting by offering a \$30 rebate on home composters purchased at participating retailers and providing “how to” information on their website.

At most RDBN waste management facilities there are opportunities for reuse (Photo 3-1 and Photo 3-2):

- Bikes and lawn mowers that are dropped off at the site are set aside so that they can be taken for salvage or repair;
- Reusable windows and doors are set aside so that they can be reused or repurposed; and
- The wood waste stockpile is made available for salvage.



Photo 3-1: Vanderhoof Transfer Station Salvage Areas
 (photo by Tetra Tech 2017)



Photo 3-2: Vanderhoof Transfer Station Salvage Areas
 (photo by Tetra Tech 2017)

In addition, there are staffed Reuse Sheds at eight of the RDBN's waste management facilities. Four of these sites have an additional attendant dedicated to managing the reuse sheds:

- | | |
|------------------------------------|---|
| ▪ Smithers/Telkwa Transfer Station | ▪ Vanderhoof Transfer Station |
| ▪ Granisle Transfer Station | ▪ Fort St. James Transfer Station |
| ▪ Southside Transfer Station | ▪ Area "D" (Fraser Lake Rural) Transfer Station |
| ▪ Burns Lake Transfer Station | ▪ Knockholt Landfill |

The Reuse Sheds generally take reusable household goods such as dishware, clothing, books and sporting goods. There is no cost to customers to drop off or take away items from the sheds.

In the broader community, reuse of goods is prevalent. Examples of reuse include:

- A toy library located in a church basement in Vanderhoof;
- "Man Sheds" where volunteers receive non-working machinery with an aim to repair it and extends it's useful life;
- Thrift stores are operated in most communities; and
- On-line services and garage sales to buy/sell/giveaway used goods (e.g., Craigslist, Kijiji, and Facebook).



Photo 3-3: Smithers/Telkwa Transfer Station Reuse Shed (photo by Tetra Tech 2017)

3.2 Diversion: Recycling

3.2.1 Residential Recycling

There are a range of recycling services available to RDBN residents, although the availability of services varies across the region.

Municipal curbside recycling programs are currently provided to residents in the municipalities of Smithers, Telkwa and Fort St. James (by Nak'azdli First Nation Band), as well as to residents on the Nak'azdli First Nation reserve lands near Fort St. James. These three curbside collection programs are funded in part by Recycle BC as part of an EPR program for residential recyclable materials. Recycle BC also funds the collection of residential recyclables at the Burns Lake Return It Depot, Smithers Bottle Depot and Nak'azdli Recycling Depot. For additional details on the Recycle BC program, refer to Section 3.2.3 on EPR.



Photo 3-4: Baled Recyclables at the Smithers and Area Recycling Society Facility (photo by Tetra Tech 2017)

3.2.2 Industrial, Commercial and Institutional (ICI) Recycling

Cardboard is a large component of waste generated by the ICI sector. This bulky material has established recycling markets and consequently, in 2016, RDBN banned its disposal as garbage as a means of ensuring that this material is recycled rather than landfilled.

Businesses and institutions (schools, hospitals, etc.) in RDBN may engage in recycling in one or all of the following manners:

- Hire a collection service to collect recyclable materials. Private and non-profit collection services for cardboard are available to most communities along the Highway 16 corridor, as well as in the communities of Fraser Lake and Fort St. James.
- Self-haul their recyclable materials to a recycling facility. There are drop off locations for ICI cardboard and paper in Vanderhoof, Smithers, Burns Lake (Photo 3-5) and Fort St. James.
- Back haul their recyclable materials to the Lower Mainland (an approach that is typically done by only large generators that have their own on-site baler for materials such as cardboard and pallet wrap).



Photo 3-5: ICI Recycling Bins Provided at the Burns Lake Bottle Depot (photo by Tetra Tech 2017)

3.2.3 Extended Producer Responsibility

EPR is a provincial policy tool that aims to shift the responsibility for end-of-life management of products (physically and economically) to the producer and away from local governments. This policy is intended to create an incentive for producers to include environmental considerations in design of products.

EPR programs in BC are mandated by Recycling Regulation 449/2004, under the EMA. The regulation requires producers of the designated products to develop a program for their end-of-life collection and recovery of materials and to consult stakeholders (including local governments) when developing their plans.

The range of products managed through EPR programs has expanded significantly in the last decade. Material collection at the Burns Lake Recycle Depot is shown in Photo 3-6 and Photo 3-7.



Photo 3-6: Burns Lake Recycle Depot Electronics Recycling (photo by Tetra Tech 2017)



Photo 3-7: Burns Lake Recycle Depot RecycleBC Materials Collection (photo by Tetra Tech 2017)

Table 3-1 provides a list of the products currently covered by British Columbia's EPR programs and the number of collection sites available in the RDBN. As shown, the regional district is reasonably serviced with take back locations for products regulated under the Recycling Regulation, with the exception of a take back location for outdoor power equipment (no known sites) and the limited sites available for residential packaging and printed paper (i.e., household recyclable materials).

Table 3-1: Regulated EPR Programs in British Columbia

Product Category	Program(s)	Take Back Available in RDBN
Antifreeze, Used Lubricating Oil, Filters and Containers	BC Used Oil Management Association	13 sites
Beverage Containers	Encorp (non-alcoholic and wine, spirits, coolers and import beer in non-refillable containers)	6 sites
	Brewers Distributed Limited (fillable and canned beer)	27 sites
Electronics and Electrical	Call2Recycle/Recycle My Cell (household batteries and cell phones)	8 sites
	Electronics Products Recycling Association (EPRA) (electronic, including: computers, televisions, audio-visual, medical equipment, office equipment, toys)	3 sites
	LightRecycle (lamps and lighting equipment)	10 sites
	Major Appliance Recycling Roundtable (MARR) (large appliances)	8 sites*
	Outdoor Power Equipment Institute (OPEI) (Outdoor Power Equipment)	0 sites
	Canadian Electric Stewardship Association (CESA) (small appliances, power tools, sports and exercise equipment, hobby, craft)	4 sites
	AlarmRecycle (smoke and carbon monoxide alarms)	4 sites
	Switch the 'Stat (thermostats)	unknown
Lead Acid Batteries	Canadian Battery Association & Interstate Battery System	6 sites*
Packaging and Printed Paper (residential only)	Recycle BC (previously Multi-Material BC)	3 sites
Paint and Solvents and Flammable Liquids, Gasoline and Pesticides	Product Care (operating as ReGeneration)	9 sites*
Pharmaceuticals	Health Product Stewardship Association	3 sites
Tires	Tire Stewardship BC	25 sites

* Collection sites include select RDBN facilities (transfer station or landfill).

RDBN is a member of the BC Product Stewardship Council, a body that advocates on behalf of local government for effective EPR programs. Through this council, RDBN engages with the Province and the various EPR programs to improve services levels in the RDBN.

3.2.4 RDBN Waste Management Facilities

The RDBN provides opportunities for recycling at its solid waste management facilities, as outlined in Table 3-2. Collection of paint, solvents, fuels and pesticides is done as part of an EPR program for these products and funding is provided by the stewardship agency Regeneration for RDBN to act as a collection site. The collection of plastic and mixed paper at the Vanderhoof Transfer Station is a service provided by the Nechako Waste Reduction Initiative (see Section 3.2 for additional information on this organization), with the collection containers being hosted by RDBN.

Table 3-2: Recycling at Solid Waste Management Facilities

Facility	Metal*	Yard Waste	Paint	Solvents, Fuels, Pesticides	Propane Tanks	Automotive Batteries	Plastic (#1-#7)	Mixed Paper
Smithers-Telkwa Transfer Station	✓	✓	✓	✓	✓	✓		
Knockholt Landfill	✓	✓	✓		✓	✓		
Burns Lake Transfer Station	✓	✓			✓	✓		
Granisle Transfer Station	✓	✓			✓	✓		
Area "D" (Fraser Lake) Transfer Station	✓	✓	✓		✓	✓		
Vanderhoof Transfer Station	✓	✓			✓	✓	✓	✓
Fort St. James Transfer Station	✓	✓	✓		✓	✓		
Manson Creek Landfill	✓							

*Includes scrap metal, auto hulks and large appliances

3.2.5 Construction and Demolition Waste Recycling

Waste from construction, demolition and renovation projects (C&D waste) consists primarily of wood and, to a lesser extent, roofing materials, drywall, plastic, cardboard, metal, concrete and other building materials. There are no known opportunities to recycle C&D waste in the RDBN, with the exception of cardboard and metal recycling, as described in the sections above.

3.3 Diversion: Organics Management

Organic waste generally refers to yard and garden waste (i.e. leaves, branches, weeds, and grass), food waste, and some non-recyclable paper products such as paper toweling, tissue and waxed cardboard. There are opportunities to reduce the amount of organic waste, particularly food waste, which is landfilled, as shown in Figure 3-2. This figure is a hierarchy of food waste management solutions that replicates the pollution prevention hierarchy of reduce then reuse then recycle, before considering disposal.

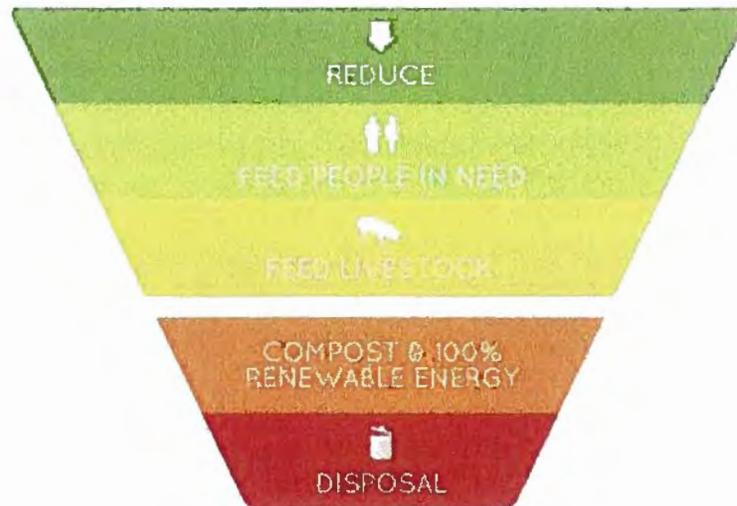


Figure 3-2: Food Waste Management Hierarchy

In the RDBN, there are programs in place to redirect excess food from some stores and bakeries to people in need through local social service organizations. In addition, some commercial generators of organic waste, such as grocers, restaurants and breweries, give some or all of their organic waste to local farmers for use as animal feed.

The RDBN receives yard and garden waste at most of their solid waste management facilities, which is composted with sludge from their septic ponds, for use as final cover at their landfills. This composted material has proven very effective as a growing medium for the grasses and other flora planted on the closed landfills.

3.4 Collection

Collection of solid waste is discussed in detail in Section 2.5.1. Residential garbage collection is managed by individual municipalities while residents in electoral areas are typically required to either self-haul their garbage to the nearest transfer station or landfill or individually contract collection services from a private waste hauler. Curbside collection of recyclables is provided in three communities (Town of Smithers, Village of Tektwa, and the District of Fort St. James) as well as on the Nak'azdli First Nation reserve lands. Some municipalities collect garbage from small ICI generators. Private haulers offer commercial collection of garbage and recyclables for the ICI sector.

3.5 Transfer

Regionally operated Transfer Stations are discussed in detail in Section 2.5.2. In addition to the seven transfer stations operated by RDBN which offer various diversion services in addition to garbage collection, the Takla First Nation also operates a small transfer station which primarily accepts garbage from the Takla Landing community.

3.6 Residuals Management

All disposal and transfer facilities in the region are managed by RDBN. The objective of the 1996 SWMP was to bring all operating landfills in the region in compliance with British Columbia's Landfill Criteria for Municipal Solid Waste (1993 Ministry) which was subsequently updated in 2016. The plan focused on eliminating small historical "dump" sites in favor of the two current sub-regional landfill sites:

- The Clearview Landfill in the eastern portion of the region (municipalities and electoral areas east of Burns Lake); and
- The existing Knockholt landfill in Houston (the western portion of the region servicing Burns Lake and municipalities and electoral areas to the west).

The plan also identified the need to upgrade and apply for exemptions to portions of the Landfill Criteria for the Manson Creek landfill to service the small population in the area. Based on the low tonnages disposed at the Manson Creek landfill, the Ministry has allowed continued operation as a trench fill landfill per the existing permit with the addition of an electrified perimeter fence to limit animal attraction.

As a result of the 1996 SWMP, the Clearview sub-regional landfill was sited and designed to serve populations of the eastern portion of the region. The Knockholt and Manson Creek landfills were updated to meet Ministry requirements. Scale systems were installed at both sub-regional landfills in 2007 to track materials received at each facility.

Prior to 2015, all landfills in the region were operated by contracted operators. RDBN now directly manages the operations at Knockholt and Clearview sub-regional landfills (2016) and has seen significant savings in operations costs since these changes were made. All of the region's operating landfills are enclosed by an electric fence to limit attraction of bears.

Both sub-regional landfills are operating under Operational Certificates (OCs) and associated approved Design, Operations, and Closure Plans (DOCPs) developed prior to release of the second edition of the landfill criteria (Updated Criteria) (Ministry 2016). The Ministry has not indicated any changes required to the existing landfill Operational Certificates. Operation as per the approved DOCP at each site is not anticipated to trigger updates to Operational Certificates. Updates to the DOCP may be necessary in the event that the sub-regional landfill OCs are amended.

3.6.1 Waste to Energy

There are currently no waste-to-energy (WTE) processes in the region that are using waste streams controlled by RDBN. The RDBN commissioned a Feasibility Study (AECOM 2010) to investigate "economic opportunities that may be created by applying new waste management technologies". Technologies for creating energy, fuel, and compost/soil conditioner from waste were investigated through the project. As a component of the project, an expression of interest was issued to identify private sector organizations to provide commercial available and appropriate refuse derived fuel technologies.

The study recommended:

- Supporting development of solid fuel industries by making suitable feedstock available to the private sector;
- Considering small scale composting of food and yard waste not desirable for fuel feedstock;
- Deferring WTE technologies and reviewing every five years to identify changes in available technologies or economics; and
- Reassessing tipping fees as a means to create a more level playing field by reflecting the true cost of managing waste.

Due to the high capital investment required for centralized systems and the significant hauling costs that would be incurred to consolidate waste tonnages to utilize commercially viable waste processing technologies, the 2010 WTE study (AECOM) did not recommend investment by RDBN in any technological solution. The long-term commercial viability of alternative processing technologies is still being proven even for large urban areas like Metro Vancouver. Recent guidance provided by solid waste professional organizations suggests caution for communities considering emerging technologies⁹ to manage solid waste.

⁹ The National Waste & Recycling Association (NWRA) and the Solid Waste Association of North America (SWANA) published a Briefing for Elected Officials Effective Responses to Emerging Waste Management Technology Proposals in 2017. Available online https://swana.org/Portals/0/Resources/SWANA_NWRA-Briefing_for_Elected_Officials-Effective_Responses_to_Emerging_Waste_Management_Technology_Proposals.pdf

3.7 Promotion and Education

Waste management-related promotion and education is done by RDBN, municipalities, local non-profit organizations with an interest in waste management issues, and by private waste management companies.

Municipalities provide information related to the waste management services that they provide to the community – generally curbside garbage collection. Common communication materials include information mailed to each home and published on the municipality’s website. The Town of Smithers has launched an app called *Smithers Recycle Coach* to provide users with timely information on local waste management services.

Similarly, private sector waste management companies, including local depots, provide information related to the waste management services that they provide to ensure that their customers know the range of materials that they can recycle or take to a depot, and how to prepare those materials properly.

The RDBN provides a broad range of information on their website, including information on where to take what materials/products, RDBN waste management facility information, how-to information on composting, and details on the solid waste management plan. Additionally, they publish a Sustainability Newsletter. Every month, a new issue is posted on their website, with recycling news from around the region, plus tips on sustainable living, crafts, recipes and more.

The non-profit organization Greening Up Fort Society, based in Fort St. James, keeps their community informed on local initiatives through their Facebook page. They also organize local clean up events.

Another non-profit organization, Nechako Waste Reduction Initiative, has a mission to initiate and support effective ways to reduce waste in the community of Vanderhoof. They receive funding from RDBN to undertake a range of initiatives in the Vanderhoof area, including:

- Creation of the Green Toolkit, which is a set of 200 reusable place settings that can be rented for community and private events instead of using disposable dishware;
- Working with Nechako Valley Food Network to help “green” local events. A green event is an event in which waste is kept to a minimum, local food is served and volunteerism is promoted. The NWRI is responsible for minimizing waste at these events and achieves this through the use of reusable dinnerware, composting food waste and recycling beverage containers and paper or cardboard packaging;
- Operating a program to collect corrugated cardboard and mixed paper at the Vanderhoof Transfer Station;
- Coordinating community clean up events;
- Writing articles in the local paper;



Figure 3-3: RDBN Recycling Brochure Example

- Maintaining a website and Facebook page to keep local residents informed on the current recycling options and waste reduction initiatives;
- Working with the municipality to establish a residential curbside corrugated cardboard recycling pilot program in Vanderhoof in 2017; and
- Providing free waste reduction workshops for classrooms, community groups, and youth programs across Vanderhoof.

4.0 FINANCE AND ADMINISTRATION

4.1 Plan Financing

The solid waste management system is primarily funded through taxation with approximately 60% of average annual revenue coming from taxes. Tipping fees account for approximately 5% of average annual revenue. Based on the region's budget, a tax rate is established and applied based on assessed property value.

Table 4-1 summarizes the RDBN's projected budget as identified in the five year financial plan through 2021. The RDBN has seen surpluses over several years but is projecting balanced budgets after 2017. RDBN's main solid waste expenses are administration and transfer station operations which comprise almost 70% of average annual expenses. Operations at the Region's three active landfills account for over 10% of annual expenses. Balanced budgets are projected from 2017 through 2021.

Table 4-1: Summary of RDBN Solid Waste Financial Plan 2017 to 2021

	2017	2018	2019	2020	2021
Taxation	\$ 3,101,24	\$ 3,536,058	\$ 3,378,469	\$ 3,460,692	\$ 3,112,525
Recycling	\$ 37,000	\$ 37,000	\$ 37,000	\$ 37,000	\$ 37,000
Tipping Fees	\$ 248,000	\$ 241,000	\$ 246,000	\$ 248,000	\$ 246,000
Transfer from Reserves	\$ 567,000	\$ 120,000	\$ 133,000	\$ 45,000	\$ 45,000
Prior Year's Surplus	\$ 1,257,240	\$ -	\$ -	\$ -	\$ -
Other	\$ 1,041,434	\$ 1,460,312	\$ 1,051,434	\$ 1,244,495	\$ 1,041,434
Revenue Total	\$ 6,249,918	\$ 5,394,370	\$ 4,843,903	\$ 5,033,187	\$ 4,481,959
Administration	\$2,003,245	\$1,945,726	\$1,831,464	\$1,789,359	\$1,467,310
Transfer Station Operations	\$1,673,950	\$1,681,966	\$1,671,905	\$1,695,643	\$1,718,091
Active Landfill Operations	\$655,207	\$659,822	\$670,668	\$685,931	\$703,898
Operating Contingency	\$23,292	\$28,786	\$28,794	\$29,184	\$29,588
Inactive Landfill Closure / Post-Closure	\$124,300	\$47,300	\$47,300	\$47,300	\$47,300
Recycling Operations	\$935,692	\$344,538	\$344,539	\$344,539	\$ 344,539
Capital Expenditures	\$593,000	\$525,000	\$ 88,000	\$ 270,000	
Contribution to Raserves	\$241,233	\$161,233	\$161,233	\$ 171,233	\$171,233
Expenses Total	\$6,249,919	\$5,394,371	\$4,843,903	\$ 5,033,189	\$4,481,959
Surplus	\$ -				

5.0 INDUSTRY TRENDS AND DEVELOPMENTS

The effective management of solid waste and effective diversion of materials from landfills is a perennial challenge for communities across North America. These challenges are magnified in the North where harsh climate, low population density, and significant distance from material markets affect day-to-day operations and the ability for communities to effectively contribute to sustainable material markets for recyclable and reusable materials. A number of best practices are emerging as northern communities tackle challenges in managing solid waste.

- **Reduce**
 - **Single-use Bags.** Several communities have attempted to manage litter and debris around landfills by reducing the use of single-use plastic bags. In 2010, the Northwest Territories implemented a mandatory 25 cent surcharge for each Single-use retail bag at all grocery stores. This was quickly followed by an expansion of the program to all retail stores in 2011. The program has seen an estimated 72% decrease in single-use retail bag use in the Northwest Territories. Several communities across Canada have banned single-use plastic bags including the Regional Municipality of Wood Buffalo (Fort McMurray, Alberta). These bans have varying levels of effectiveness depending on implementation.
 - **Food Waste Prevention.** Food waste reduction and rescue has become paramount in recent years. With food waste estimated to be at a third of food produced for consumption, local and senior level governments have responded by setting ambitious food waste reduction goals. In British Columbia, the Ministry has taken the initiative to provide food waste reduction tools¹⁰ for residential and commercial sectors including a Food Waste Reduction Toolkit tailored to municipalities. Programs such as the residential food waste reduction prevention campaign, Love Food Hate Waste¹¹, serve as turn-key tools to implement across jurisdictions.
 - **Behaviour Change.** Adopting a community-based social marketing¹² (CBSM) approach to educating the community can foster more effect and long lasting behaviour change for waste reduction and diversion. CBSM provides a framework for how to target a specific behaviour such as increasing recycling participation for specific audiences by addressing barriers, reinforcing benefits, and using specific tools such as prompts and commitments to change norms. The Squamish Lillooet Regional District and Zero Waste Yukon have successfully integrated behaviour change tools into education initiatives to further optimize their success.
- **Reuse**
 - **Reuse facilities** offer the opportunity to give a number of household items a second life. The Reuse Shed at the Smithers/Telkwa Transfer Station is a good example of a well-used and effective facility that both diverts materials and offers a service to the community.
 - **Deconstruction and Building Material Reuse.** Reuse of building materials is a growing opportunity in many communities as building deconstruction services become increasingly available. Both industrial and residential materials are being recovered and diverted from landfills through development of stores that either sell or provide materials free of charge. In most communities, non-profit organizations or governments provide the storage services.
- **Recycle**
 - **Volatile Recycling Markets.** Recyclable materials collected by local and regional governments are sold in markets as raw materials for future remanufacturing. Both low costs for virgin (non-recycled) materials and

¹⁰ BC Ministry of Environment and Climate Change Strategy, 2017. Food Waste Reduction Tools & Resources. <http://www2.gov.bc.ca/gov/content/environment/waste-management/recycling/organics/tools-resources>

¹¹ Metro Vancouver, 2017. Love Food Hate Waste Canada. <http://www.lovefoodhatewaste.ca>

¹² Community-based Social Marketing, 2017. <http://www.cbsm.com>

changes to international markets have significant impacts on the cost of providing recycling services. The Chinese government's "National Sword 2017" initiative enacted high quality standards for materials exported to the country resulting in decreased market for lower quality materials (such as mixed paper and mixed plastics) resulting in recyclers limiting or eliminating service for mixed materials. As recycling markets have changed, remote and northern communities have been challenged to meet their residents' growing aspirations for waste diversion while effectively managing program costs. Domestic haulers/recyclers have eliminated collection of mixed materials in some northern and remote areas. Markets for recyclable materials will likely continue to be volatile over the coming years as the industry adjusts to changes in export requirements and redevelops local material markets.

- **Organic Waste Diversion.** A number of northern and remote communities have turned their focus to diverting organics which can be processed locally through centralized or decentralized composting facilities rather than focusing on recyclables. Diverting organic waste has the added benefit of creating an end product of high quality soil amendment that residents can see and use. The City of Whitehorse and the City of Yellowknife are both offering curbside collection of organics and managing small centralized compost facilities at their existing landfills. Despite northern climates, low technology static pile composting is possible with sufficient care and consideration.
 - **EPR Program Growth.** The contribution of EPR programs have significantly increased the ability for northern communities to offer cost-effective recycling programs in British Columbia. Since the 1996 SWMP was developed, EPR programs have developed to provide key support for municipal and regional recycling programs. On behalf of material producers, the EPR stewards provide financial and logistical support to collect and transport materials from communities to processors and markets. The list of products included in EPR programs has and will continue to grow with continued local government advocacy. Effective use of and coordination with these programs is key to successful diversion programs.
- **Recovery**
 - **Biomass and Energy Recovery.** Technology has successfully been applied at a number of facilities to effectively process waste from the manufacturing process to supplement energy production. Offcuts and sawdust from lumber mills are often collected and used to either produce additional materials or fuel WTE processes. Sawmill and logging waste is converted to electricity at the Veolia biomass facility in Fort St. James. The facility was constructed to manage the massive amount of waste produced by the mountain pine beetle epidemic in British Columbia. Other high energy industries such as cement producers are seeking C&D waste and other high energy materials as alternative fuel sources for their processes. Commercially viable WTE technologies have high capital costs and rely on economies of scale for efficient operations.
 - **Residuals Management**
 - **Greenhouse Gas Management.** Northern communities typically landfill residual materials. The use of modern engineered landfills with effective environmental monitoring programs limits the risk of landfilling materials to the surrounding environment. The production of methane in landfills is a growing concern as this potent greenhouse gas contributes to climate change. Increasingly, landfills are looking for opportunities to manage methane through landfill gas collection, diversion of organics from landfills, and use of alternative cover systems.

6.0 SYSTEM GAPS AND OPPORTUNITIES

Section 1.0 to Section 5.0 summarize the current system for managing solid waste in the RDBN. Section 6.0 identifies a number of gaps and opportunities in the RDBN's solid waste management system and will be considered for further analysis:

- **Organics Diversion** is currently occurring on a small scale at all of the region's public access facilities. However, opportunities exist to expand the amount and type of materials processed through small composting sites. While the RDBN is reliant on global markets to accept its recyclable materials and is therefore impacted by market forces beyond regional borders, local markets could be developed to use the compost created through an effective organics diversion program.
- **Wood Waste** is collected separately at all facilities. Clean wood waste (which is collected separately from unclean wood waste in the western portion of the region) offers good potential for diversion if an alternate end use, such as fuel, can be identified in the region.
- **Packaging and Printed Paper EPR Programs** (Recycle BC) may provide additional financial and logistical support to expand Recycle BC recycling services in the region. .
- **EPR requirements** have expanded since the original SWMP. The Ministry is likely to continue to add materials to the EPR system. As products are added, services in the region could expand to take advantage of additional support available.
- **Tipping Fees/Financial Structure** of the system is primarily financed through taxation verses tipping fees, which minimizes financial incentive for residents, business, and most municipalities to dispose of materials rather than recycle them. Reassessing the feasibility of implementing tipping fees at all facilities may better support the solid waste management system, diversify revenue sources, and support the RDBN's strategic priorities.
- **Regional Communications** between municipalities and waste diversion organizations is infrequent, which limits the sharing of best practices between communities to support reduction and diversion behaviour change initiatives and other local diversion programs.
- **Financial Support for Local Waste Reduction and Recycling Programs and Initiatives** is currently applied on a case-by-case basis. No overarching policy strategy or evaluation criteria have been developed to prioritize investments to ensure that they work toward the RDBN's waste reduction and diversion goals.
- **RDBN is working with Reduced Staff Levels** and is currently down one full time staff person while the strategic direction of solid waste management is being determined. In order to meet current and future organizational priorities additional staff will most likely be required.
- **Emerging Waste Conversion Technologies** were identified as an area of interest in several conversations. These technologies are expensive and without the quantities of waste (i.e. economies of scale) in RDBN, the unit processing costs would be very difficult to complete against the low disposal cost in the regional district. Decision makers may require guidance and additional context to assess the feasibility of emerging technologies in the region.

7.0 ESTABLISHING GOALS AND TARGETS

The Ministry has established waste disposal as an annual reporting requirement for regional districts and set a provincial target of 350 kg per capita per year to be achieved by 2020. A second performance measure set by the Ministry is to have 75% of the population in British Columbia covered by an organic waste disposal restriction by 2020. Through a separate Recycling Regulation, the Ministry oversees an extended producer responsibility (EPR) program that sets 75% recovery targets for products covered through the program (e.g., beverage containers, packaging and printed paper, electronics, and other items).

8.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

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REFERENCES

- AECOM. 2010. Waste-to-Energy, Job Creation to Sustainable Communities: Feasibility Study Final Report. Burnaby, BC. April 2010. Project Number: 60117232.
- Government of British Columbia. 1993. Ministry of Environment: Landfill Criteria for Municipal Solid Waste. Victoria, BC.
- Government of British Columbia. 2016. Ministry of Environment: Landfill Criteria for Municipal Solid Waste Second Edition. Victoria, BC.

APPENDIX A

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

GEOENVIRONMENTAL

1.1 USE OF DOCUMENT AND OWNERSHIP

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The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by third parties other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

1.6 GENERAL LIMITATIONS OF DOCUMENT

This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary exploration, investigation, and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 NOTIFICATION OF AUTHORITIES

In certain instances, the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by TETRA TECH in its reasonably exercised discretion.

REGIONAL SOLID WASTE ADVISORY COMMITTEE (RSWAC)**TERMS OF REFERENCE**

Background/Purpose: The Regional District of Bulkley Nechako (RDBN) is undertaking a review and update of the Solid Waste Management Plan (SWMP). Public and stakeholder consultation is integral to the review. In accordance with the Ministry of Environment's Guide for the Preparation of Regional Solid Waste Management Plans, a combined public and technical advisory committee will act as a working group for the region's interests and will provide sound advice to the RDBN Board of Directors for approval.

Scope: The scope of the RSWAC is to review the existing Solid Waste Management Plan and provide input from a stakeholder and community perspective which will be considered as part of the SWMP Update.

Roles and Responsibilities: The Roles and Responsibilities of the committee and its individual members include the following:

- Represent a balance of community interests;
- Act as advisors to the RDBN Board of Directors on the development of the SWMP Update;
- Assist in reviewing current programs and identifying issues and opportunities;
- Act as a liaison between committee member's Council/Board and the RDBN; providing feedback from their Council/Board to the RDBN and increasing awareness of solid waste issues amongst their constituency;
- Review guiding principles and provide feedback for the SWMP Update;
- Review information provided by the RDBN and its consultants and provide comments and suggestions as well as highlight information gaps to be considered for the SWMP Update;
- Assist in developing and evaluating a variety of options and strategies for the SWMP Update;
- Participate on smaller ad-hoc committees dealing with specific issues or tasks (as required);
- Contribute to programs and policies that are in the best interests of all residents of the RDBN, balancing both community and industry needs and technical requirements;
- Participate in the public consultation phase through public meetings (as required).

Authority: The RSWAC makes recommendations on the proposed plan to the RDBN Board of Directors via the Waste Management Committee. The RDBN Board of Directors is the final decision-making authority.

Membership Composition:

The committee shall consist of no more than 25 members representing a diversity of backgrounds, interests and geographical location. The committee will combine technical, political and community representation and will involve the RDBN, municipal and First Nation governments from the Bulkley-Nechako region. Membership shall include representation as follows:

Voting Members:

- District of Vanderhoof
- Village of Fraser Lake
- Village of Burns Lake
- Town of Smithers
- Village of Granisle
- Lake Babine Nation
- Cheslatta Carrier Nation
- Takla First Nation
- Public (rural and municipal)
- Saik'uz First Nation
- Nak'azdli First Nation
- Public Sector/Institutions (eg. School District, Hospital)
- Waste Management Service providers
- Agricultural Sector
- General

The RSWAC will also include 3 non-voting technical advisors representing the RDBN. A consulting firm experienced in waste management planning will facilitate the planning process and serve as an advisor and resource to the committee.

Term and Time Commitment: The Committee will operate during the plan review process which is expected to be from January to June 2018. The Committee will be discontinued once the updated Solid Waste Management Plan is approved by the RDBN Board of Directors for submission to the Minister of Environment. It is anticipated that there will be 5-6 meetings of the Committee during the planning process, with the provision for workshops and teleconferencing and webinars or other presentations at the discretion of the RDBN and the RSWAC. Committee members will be asked to review documents related to the review process on their own time. Following the adoption of the final SWMP the RDBN will be selecting a standing committee from the RSWAC that will meet annually to review the plan moving forward.

Appointments: Voting members shall be approved by the RDBN Board of Directors.

Chair: The RSWAC will elect a Chair for the RSWAC from among its voting members at the start of the first RSWAC meeting.

Quorum: Shall be a minimum of 50% plus one of the voting members.

Communications: Committee members are asked to be in attendance at all the meetings if possible. Any absentee members should notify Rory McKenzie at the RDBN about missing a meeting. Record of meeting minutes will be taken by assigned RDBN staff member and emailed out with meeting agendas to committee members prior to the next RSWAC meeting. Agendas and adopted meeting minutes will be posted on the RDBN website.

Conduct of members at Meetings:

- 1) Committee members are expected to be respectful of one another and to offer input and suggestions that are relevant, constructive and productive.
 - Members should be committed to providing advice on developing recommendations.
 - Members will respect the ideas, concerns and opinions of others.
 - Everyone will have an opportunity to speak but only one person shall speak at a time as determined by the Chair.
- 2) Administrative matters related to the RSWAC will be conducted by the RDBN staff acting through the Chair.
- 3) For clarity, these Terms of Reference do not delegate any authority or corporate powers to the RSWAC.



Regional Solid Waste Advisory Committee

Workshop #1 – System Assessment Minutes

Wednesday January 24, 2018

10:00 am – 2:00 pm

RDBN Board Room, Burns Lake BC

RSWAC Members Present:

Cindi Pohl (Waste Management),
 Mickey Philips (Saik'uz First Nation),
 Tim Bancroft (School Districts #54 & #91),
 Jon Solecki (Agriculture—Lakes District Cattlemen's Association),
 Dave Christie (Village of Fraser Lake),
 Trinda Elwert (Nechako Waste Reduction Initiative),
 Garth Schienbein (Burns Lake),
 Earnie Harding (Smithers and Area Recycling),
 Shelley Wall (Cheslatta Carrier Nation),
 Dale Ross (Village of Burns Lake),
 Sharon Smith (Village of Granisle),
 Genevieve Paterson (Smithers),
 Roger Smith (Town of Smithers),
 Bernard Patrick (Lake Babine Nation)(left at 1:30 pm),
 Sheila McCutcheon (District of Vanderhoof)(via teleconference)
 Jerry Petersen (Electoral Area 'F'—Vanderhoof Rural),
 Eileen Benedict (Electoral Area 'E'—Francois-Ootsa Lake Rural),
 Mark Fisher (Electoral Area 'A'—Smithers Rural)

Staff Present: Janette Derksen (Deputy Director of Environmental Services), Rory McKenzie (Director of Environmental Services), Melany DeWeerd (Chief Administrative Officer), Elaine Wiebe (Environmental Services Assistant)

Consultants Present: Lauren Quan (Tetra Tech), Carey McIver (Carey McIver & Associates)

Welcome and Housekeeping (Rory McKenzie)

Rory McKenzie welcomed everyone to the meeting and summarized housekeeping (fire exits, washrooms, breaks, and cell phones).

Introductions (Rory McKenzie)

The consulting team, committee members, and staff introduced themselves.

BC Solid Waste Management Planning (Carey McIver)

- Carey McIver summarized the process to update the plan:
 - A four step process will be used.
- BC can be proud of ourselves. Per capita waste is one of the lowest in North America.
- The plan is powerful. A plan approved by the Minister of Environment allows the region to borrow money without going to referendum. For plan approval there must be good and meaningful public consultation. This committee is part of that consultation and will aid in setting the plan direction.

Terms of Reference Review and Approval (Carey McIver)

- Carey McIver summarized the draft terms of reference.
- Genevieve Paterson asked if the committee would have input on the public consultation. Carey McIver replied that the consultants will propose what could work and the committee will get to approve that.
- No committee members indicated issues with the Terms of Reference.

Chair Election (Carey McIver)

- Carey McIver described that previous committees have chosen a board member as chair as they have experience, and provide a direct link to the board.
- Rory McKenzie nominated Eileen Benedict as the chair. Mark Fisher seconded it. CARRIED.

Solid Waste Management in RDBN (Lauren Quan)

- Lauren Quan discussed the current system analysis.
- Genevieve Paterson asked about the difference between an electoral area and a municipality. Carey McIver answered that a municipality has an elected council that has a budget and provides services. An electoral area only pays for the services they want. The province used to provide services to rural residents. They wanted to transition that out so they created Regional Districts. The RD is responsible for ensuring there is a plan for residual management.
- Dave Christie asked about wood waste at the transfer stations. Rory McKenzie replied that when it's hauled, it is put across the scale and weights are tracked.
- Stewardship programs are intended to make those who produce materials responsible for their end of life management.
- Recycle BC is the stewardship program for packaging and printed paper. The provincial Recycling Regulation establishes a minimum 75% recovery rate for programs. Jon Solecki asked what the funding model was for Recycle BC. The Consultants explained that it is funded through point of sale levies. Producers and consumers pay for the system. Genevieve Paterson asked if there was an organizational chart to show the hierarchy. Carey McIver referred her to the Ministry of Environment website. Mark Fisher pointed out that our RD has a number of communities that are not part of the Recycle BC program. Also, they are not collecting ICI materials, which is 65% of the waste stream. Earnie Harding asked about Recycle BC's surplus. Carey McIver responded that the organization has historically carried a surplus to address risk due to price fluctuation in material markets.
- Two RDs (RDBN is one of those) in the province don't fund a significant portion of their system through tipping fees. 50% of RDBN operating costs are covered through taxation.
- Genevieve Paterson asked about RecycleBC's contribution to the RDBN budget. Carey McIver answered that the biggest cost is residual waste in RD. Not waste diversion. Janette Derksen clarified that the RD does not receive any money from Recycle BC as the Regional District doesn't have any contracts with them.

12:00PM: Lunch and Discussions**Issues and Opportunities in Managing Solid Waste (Lauren Quan)**

- Group Activity: The committee was split into small groups and asked to provide thoughts on the solid waste management in RDBN answering three questions. (What should we keep doing? What should we start doing? What should we stop doing?)

- A summary of group responses follows.

Group #1: Jerry Petersen: Need to balance public and private. It is important to encourage the public and private sector to offer services and encourage individuals to recycle. Genevieve Paterson: Education is key. Making sure that people know what they can do as individuals to make a difference. So much recycling is the packaging. Stop being separated by Governance and funding.

Group #2: Shelley Wall: Need to talk to our recycling depots. Bins aren't available at the transfer station anymore. The recycling depot in Burns Lake was closed over the holidays. People will throw things away if they can't get to the depot. Start with the kids. If you want to change behavior, put it into the schools. Dave Christie: Area D Transfer Station is 5 km out of town. Recycling needs to be convenient (ideally in town). Small businesses in our communities can't take their recycling to the Recycle BC depot but they won't fill up a WM bin (and can't afford it). What else can you do?

Group #3: Mark Fisher: We need access to various things. Information and materials. Processes that different communities can tap into. How to improve their system. A clear process on that. Roger Smith: maybe it should be the RDBN negotiating with Recycle BC. 700 households in Smithers (Township) that they can't service because they don't fit the criteria. Earnie Harding: Could you provide the info from Boundary/Kootenay with Recycle BC? They do a pick up throughout their RD.

Lauren Quan reminded the group that this is looking at the system as a whole. Not just recycling and Recycle BC.

Group #4: Eileen Benedict: They discussed a composting facility. How that could be done. Could save a lot of things going to the landfill. Plastics on the farm. What to do with it?

Dave Christie: In Fraser Lake, they can only recycle paper and cardboard. But Vanderhoof can do more. The RD has to keep it consistent across the board.

Group 5: Rory McKenzie: On the staff wish list: composting is at the top of our list. You can control from the beginning to the finished product. The RD can gather that all up, turn it into a usable product and sell it cheaply to farms or others that can use it.

Janette Derksen: would like to see this plan address connectivity. Know what other municipalities are doing and work together for solutions for a common goal.

Group 6: Garth Schienbein: In Burns Lake, there are three sizes of garbage cans for residents, but there is no incentive to not produce that much garbage or have a smaller can.

Resident Survey (Lauren Quan)

- Lauren Quan provided a brief overview of responses from the RDBN SWMP public survey.
 - 258 responses were received from 10,000+ mail outs.
 - The goal was to collect general feedback about existing services and priorities for potential programs.

Issues and Opportunities (Carey McIver)

- Carey McIver summarized the System Gaps and Opportunities identified in the Current Solid Waste System Assessment Report emailed to the committee before the meeting.

Guiding Principles (Carey McIver)

- Carey McIver summarized the Ministry of Environment's 8 Guiding Principles that are recommended to provide direction for the plan and planning process.
- Group Activity: The committee was split into several groups. The groups discussed whether each principle fits for RDBN and identified the most important and least important principles for the plan.
 - Groups noted some connectedness between different principles. There was general support for most of the principles. The consulting team will compile feedback provided by the RSWAC and present proposed guiding principles at the next meeting for approval. .

Next Steps and Next Meeting

- The next RSWAC meeting will be a Webinar on February 21st. One member indicated a conflict with this meeting. RDBN staff will coordinate timing and request that communities host nearby committee members for the webinar.
- Next in person meeting March 7th.

Adjournment ~ 2 pm

Northern Waste Diversion Position Paper – Feb 2018

Background.

In December 2017, the Regional District Bulkley Nechako (RDBN) Board discussed and supported the need for a strong and collaborative northern approach when dealing with solid waste issues. Informal meetings were then held with elected officials from neighboring RDs in an attempt to identify areas of joint concern and potential collaboration. It must be noted that while these issues are prevalent in all rural areas of the province, for the purpose of having a 'starting point' this position paper is for the Regional Districts that are part of the North Central Local Government Association (NCLGA): North Coast Regional District, Regional District Kitimat Stikine, Regional District Bulkley Nechako, Regional District Fraser Fort George, Peace River Regional District, Cariboo Regional District.

Issues.

- Increasing cost of both landfilling and recycling.
- Hindering economic and social development: tens of millions of dollars dedicated towards waste management in the north limits the ability of local governments, individuals, and businesses to invest in other areas.
- Separate classification for Industrial Commercial and Institutional (ICI) recyclables: collection inefficiencies and complications for the public and private sector, and misunderstandings between service providers and Recycle BC
- Double paying – eco fees paid at the point of sale but do not fully support waste diversion in some jurisdictions, money spent by RDs on services that should be covered by such fees that are provided to Recycle BC by producers, publicly funded institutions ie. Hospitals, Schools etc that pay for private waste disposal.
- Recent Chinese 'Green Fence' policy change on imported recyclables: could result in challenges for RDs not serviced by Recycle BC, but also could create major economic development opportunities.

Goals.

- To advocate to the provincial government for changes to ministry regulated product stewardship programs that:
 - o result in fair and equitable rates and service for northern and rural communities;
 - o eliminate 'double paying' for recycling;
 - o create a process for northern and rural communities to have a voice on Recycle BC, or the creation of a 'Northern' Recycle BC
 - o increase collection targets in northern and rural communities;
 - o the inclusion of all ICI material in stewardship programs in order to alleviate challenges caused by the ICI and residential classifications and create greater economies of scale.
- To advocate to the provincial government for a zero waste strategy so that the burden and cost of managing waste is reduced from local government, and industry and

business would have a clear and consistent framework for product packaging and product stewardship moving forward.

- To collaborate with other northern regional districts and industry in an effort to increase economies of scales for the five key components of SW management (prevention, generation, collection, diversion, disposal).
- To collaborate with other northern regional districts and rural communities to investigate possible waste based economic development opportunities.
- Support the Guiding Principles outlined in the 2016 Ministry of Environment Guidelines for Solid Waste Management Planning: zero waste and circular economy, the first 3 Rs, maximize use of waste materials and manage residuals, polluter pay principle, prevent organics and recyclables from going into the garbage, collaborative partnerships, level the playing field for private and public facilities.

What.

1. Advocacy.

- a. That the Province develop and adopt a Zero Waste Strategy, based on the inter municipal working groups recommendations (enhance existing EPR programs, add new EPR programs, reduce and compost organics, work with specific sectors. <https://bczerowaste.files.wordpress.com/2017/03/bc-zw-discussion-paper-february-20172.pdf>).
- b. The inclusion of all ICI material in all stewardship programs.
- c. The elimination of 'double and triple paying' (by residents in communities with no Recycle BC services who pay the stewardship fee, property taxes for recycling initiatives, and taxes for public institutions paying for private waste and recycling collection).
- d. Partnerships with businesses in the north (that level playing field between private and public facilities/waste infrastructure, and create economies of scale for the five key components of SW management).

2. Collaboration

- a. Education campaigns
 - About the regional composting facilities across the north.
 - Illegal dumping. (e.g AVICC joint campaign).
 - General waste reduction, diversion opportunities, circular economy.
- b. Resource sharing
 - Explore the possibility of mobile capital processing equipment (e.g. plastic to oil machine, Styrofoam densifier, other?).
 - Regional human resources to support stretched RD staff (e.g. regional materials broker for non RBC material, education campaigns, new technology research and design for northern systems).
- c. Information sharing
 - General nature of agreements between Recycle BC and Northern RDs (to ensure consistent and fair service across region).
 - Best practices, and current priorities, direction, and focus for the northern RD's through a Northern conference, or formal or informal working group.

3. Regional opportunities

- a. Agriculture waste strategy and action plan / implementation.
- b. Economic development projects: northern factory or plant for processing, re-manufacturing, value added, network of waste based business.
- c. Policy development: deconstruction, re-use or repurposing of building materials, alternative building techniques, regional material bans or other operational tools.

'First Steps'.

1. During the initial discussions it was suggested that all Northern Boards answer three questions:
 - a. Does your board wish to collaborate? If so, would you adopt this position paper to give your board and staff the mandate to work on collaborative solid waste issues with other northern regional districts?
 - a. Is there someone on the board who would be a champion of these issues as part of a 'Northern Solid Waste Advocacy Working Group'? If so, who?
 - b. The intention of this paper is to outline political priorities and actions that elected officials can take that support rather than burden Regional District staff. However, staff is often in a position to advocate, develop, or execute certain components outlined in this paper. Therefore, the question must be asked 'Would your board support staff time and/or other resources beginning in 2019 that facilitate collaboration on solid waste issues across the North?'
2. Forming a Northern Solid Waste Advocacy Working Group. This group will:
 - a. Start as an informal group with any interested elected officials and any interested youth from across the North.
 - b. Discuss and work on issues through email, teleconference, and face to face meetings tagged on to existing events for elected officials.
 - c. Work in collaboration with the Provincial Inter Municipal Zero Waste Advocacy group.
 - d. Identify and work on a small list of solid waste issues common to all participating regional districts. During the initial discussions the top three issues across the north discussed were:
 - i. The need for expanded EPR programs (more types of accepted material and higher collection target rates in the North);
 - ii. The inclusion of all ICI material in stewardship programs;
 - iii. A way to divert agriculture plastics from the landfill or private burning. This inter provincial issue must look at things such as transportation of material, regional recycling or remanufacturing plants, studies from other jurisdictions;
 - iv. Educational campaign that supports regional composting facilities or individual efforts as a way to reduce organics in the landfill;

- v. Other issues identified for future discussion were potential pilot projects (e.g. small joint capital purchases of equipment that can be tested and used throughout the north).
3. All Northern Regional Districts request Minister of Environment Meetings at UBCM at which they present the northern position paper and talking points prepared by the Northern Solid Waste Advocacy Working Group.
4. Support the inter municipal zero waste position paper through a board resolution.

Background links.

Zero Waste

<https://bczerowaste.files.wordpress.com/2017/03/bc-zw-discussion-paper-february-20172.pdf>

<http://www.civicgovernance.ca/time-zero-waste-strategy-british-columbia/>

China Sword

<https://zerowastecanada.ca/press-release-wake-up-call-for-zero-waste/>

<https://www.economist.com/news/china/21725815-how-new-rule-could-wallop-recycling-industry-china-tries-keep-foreign-rubbish-out>

Waste as a business input / National Industry Symbiosis Program

<https://nispcanada.com/>