



**Maura Walker & Associates**  
ENVIRONMENTAL CONSULTANTS

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# **Powell River Regional District Solid Waste Management and Resource Recovery Plan**



**Prepared by:**  
MWA Environmental Consultants Ltd.

**In collaboration with:**  
Carey McIver & Associates Ltd.

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## Executive Summary

In British Columbia, regional districts develop solid waste management plans (SWMPs) under the provincial Environmental Management Act. This *Plan*, an update of the one prepared in 2013, provides a long term vision of how the Powell River Regional District (PRRD) would like to manage its solid wastes and will serve to guide the solid waste management related activities and policy development in the PRRD for the next 10 years.

The long-term vision for the PRRD is to have *Zero Waste* requiring disposal. The path to *Zero Waste* will be incremental. It is a long term goal that will not be achieved during the timeline of this *Plan*, and perhaps not the next one. However, it is the intention of the PRRD to continually reduce the amount of waste sent to disposal. *Zero Waste* is both a goal and a process.

For this *Plan*, the issues to be addressed were:

1. Determining how best to continue moving towards *Zero Waste*, including:
  - a) How to increase participation in available residential recycling services
  - b) How best to collect and divert the organic portion of the waste stream
  - c) How to increase participation in diversion by the ICI and residential sectors.
2. Determining how best to manage residual solid waste (the waste requiring disposal), and what should the role of the PRRD be.
3. Determining how to pay for historic and future solid waste management services and infrastructure.

This plan provides strategies, actions and a budget to address these issues.

## Progressing Toward Zero Waste

To reduce the amount of waste sent to disposal (i.e. moving the PRRD towards *Zero Waste*), the *Plan* recommends actions that will:

- Provide more reuse and upcycling opportunities
- Reduce the presence of single-use shopping bags
- Improve participation in the City of Powell River's (the City) curbside recycling program
- Improve recycling in multi-family buildings
- Assess the potential of curbside collection services for some electoral areas
- Encourage more recycling by the ICI sector
- Expand the range of recycling opportunities available.

Upon full implementation, it is estimated that the PRRD can reach the *Plan's* target of 325 kg per person or better.



## From the Ashes

While this *Plan* was being developed, the PRRD received notice that they had successfully secured a \$6 million grant to remediate an old incinerator and dump site and build a Resource Recovery Centre on the same site.

The old incinerator site, located on Marine Avenue in the City of Powell River, was where the PRRD's garbage was burned in a pit burner (incinerator) operated by the City of Powell River from 1971 to 1994. In 1994, the Ministry of Environment ordered the City to close the pit burner due to its inability to comply with air emissions standards. At this point, it was decided to not site a landfill locally, but instead to export garbage to a landfill located outside the PRRD. A transfer site was then set up at the Marine Avenue site and operated by the City until 2004. However, the waste transfer station did not meet provincial guidelines for a transfer station and consequently, in 2004 the MOE ordered the City to cease operations at the Marine Avenue transfer site to allow for the closure and remediation of the old incinerator and associated ash landfill. To date, the final closure and remediation of the site has not been done.

At this point, at the request of the City, the PRRD assumed full responsibility for the waste export system. Although staff recommended that the Board establish a publicly owned and privately operated transfer site, the Board chose to issue a Request for Proposals (RFP) for a privately owned and operated transfer facility as this was the simplest and least-cost option available at the time.

In 2004, Augusta Recyclers Inc. (Augusta) won the contract to operate a waste transfer site at their facility located south of the City. Augusta, through its partner company City Transfer, also won the contract to transport waste from the transfer site by truck and barge to the Rabanco intermodal yard in Surrey where containers of garbage are loaded onto railcars and transported to Rabanco's Roosevelt Regional Landfill in Washington State. Augusta has been providing these two services under contract to the PRRD since 2004.

In 2016, the PRRD, with the support of the City and Tla'amin Nation, submitted an application for a grant to remediate the Marine Avenue site and to use the materials remaining on the site (ash, glass, asphalt) to develop a Resource Recovery Centre (RRC). This proposed waste management facility would provide the community with opportunities to reuse, upcycle, and recycle the majority of their waste, while providing an option to dispose of those portions of the waste stream that could not be diverted.

Receiving the \$6 million grant was coincidentally timed with the SWMP discussion regarding how the PRRD should manage residual solid waste in the future. Additional factors also influenced the conversation, in particular:

- PRRD's transfer station contract with Augusta expires at the end of 2017;
- The infrastructure at Augusta is in need of a full overhaul to improve efficiencies and site safety; and
- Augusta offered to sell their transfer station property to the PRRD for the construction of the RRC.



As a result of these factors, the PRRD, in agreement with the *Solid Waste Management Plan Review Advisory Committee*, believes that time is right to shift back to a publicly-owned residual waste management system that can be constructed and operated to best management practices.

As part of the planning process, a site selection process was done that considered four sites, including the Marine Avenue site and the property offered for sale by Augusta. Due to the large financial advantage of the grant that can be applied only to the development of the Marine Avenue site, and the community and environmental benefit of having the Marine Avenue site cleaned and remediated, the Marine Avenue site was selected by the PRRD Board as the preferred location for a future RRC.

The RRC will include a commercial waste transfer station and is expected to use less than half of the land available on this property. The remainder of the remediated land, approximately 3 hectares (ha), would be made available to the City for use as a community amenity.

### **Financing the Future of Solid Waste**

To pay for the strategies and actions outlined in this *Plan*, the PRRD's solid waste management expenditures are expected to increase from \$2.1 million in 2017 to \$2.9 million in 2026. This increase will largely be funded from tipping fees however an increase in the revenue from taxes is also anticipated.

The financial strategy is a balance of revenue from tipping fees and revenue from taxation – a financial model that is a financially sustainable approach to financing the solid waste management system, while still providing financial incentives for residents and businesses to reduce and recycle their waste. Under this strategy taxation would pay for fixed costs (e.g. debt payments) and services that universally benefit all residents and businesses in the PRRD, while tipping fee revenue would pay for the variable costs associated with disposal, recycling and the operation of the RRC.

For property owners, the implementation of this *Plan* increases taxes for solid waste management by an average of \$1 per year per \$100,000 of assessed value (an increase to the solid waste portion of the tax billing of 10% per year) over the 10-year time frame of this *Plan*. Tipping fees for garbage are expected to increase 2% annually from \$220/tonne to \$260/tonne over the same time frame.

The PRRD is pursuing grant funding to construct the new commercial transfer station. If approved, the cost of borrowing will be reduced, which will in turn result in a corresponding decrease in the taxes associated with implementing this *Plan*.



**Table of Contents**

Executive Summary..... i

Glossary..... vii

1 Introduction..... 1

    1.1. Guiding Principles ..... 1

    1.2. Pollution Prevention Hierarchy, Targets and Goal ..... 2

    1.3. Updating the Plan ..... 3

    1.4. Key Drivers..... 4

2 Background..... 5

    2.1 Plan History..... 5

    2.2 Plan Area..... 7

    2.3 Population..... 7

    2.4 Economic Data ..... 9

3 The Solid Waste Management System in PRRD ..... 10

    3.1 Facilities ..... 11

    3.2 Disposal Data ..... 14

        3.2.1 Sources ..... 14

        3.2.2 Waste Composition Data ..... 15

    3.3 Waste Management System Participants ..... 16

4 Zero Waste Strategy ..... 17

    4.1 Promotion and Education..... 17

    4.2 Reduction and Reuse ..... 18

    4.3 Recycling ..... 19

        4.3.1 Improving Participation in the City’s Curbside Program ..... 20

        4.3.2 Improving Recycling in Multi-Family Buildings ..... 20

        4.3.3 An Assessment of Curbside Collection Services for Some Electoral Areas ..... 20

        4.3.4 Encourage More Recycling by the ICI Sector ..... 21

        4.3.5 Recycling at the Resource Recovery Centre ..... 22

        4.3.6 Estimated Cost of Recycling Actions..... 22

    4.4 Extended Producer Responsibility (EPR) ..... 24

    4.5 Organic Waste Diversion ..... 24

    4.6 Construction, Demolition, and Land Clearing Waste Management..... 26

    4.7 Texada Island Metal Depot..... 29

    4.8 Impact on Residual Waste Management ..... 29

5 Residual Waste Management ..... 31

    5.1 System Development..... 31

    5.2 The Future of Residual Waste Management..... 31

    5.3 Resource Recovery Centre..... 33

    5.4 Landfills..... 35

    5.5 Summary of the Residual Waste Strategy ..... 36

6 Additional Actions ..... 37

    6.1 Illegal Dumping ..... 37



6.2	Invasive Plant Species Waste Disposal .....	38
6.3	Human-Bear Conflict Management.....	38
6.4	Bylaws .....	39
6.4.1	Local Control .....	40
7	Plan Monitoring and Measurement .....	41
7.1	Plan Monitoring Advisory Committee .....	41
7.2	Annual Reporting.....	41
7.3	Five-Year Effectiveness Review .....	41
7.4	Waste Composition Study .....	41
8	Plan Implementation .....	43
8.1	Plan Implementation Schedule.....	43
8.2	Flexibility.....	43
8.3	Inter-regional District Cooperation .....	46
8.4	Plan Alignment.....	46
9	Financial Implications .....	47
10	Dispute Resolution .....	49
	Appendices.....	51
	A. Existing Solid Waste Management System Report	
	B. Terms of Reference for the Plan Monitoring Advisory Committee	

**List of Figures**

Figure 1-1	Pollution Prevention Hierarchy.....	2
Figure 1-2	Planning Process .....	3
Figure 2-1	Solid Waste Management Planning History .....	5
Figure 2-2	Summary of Programs and Policies in the 2013 SWMP .....	6
Figure 2-3	Implementation Status of the 2013 SWMP .....	6
Figure 2-4	Map of Powell River Regional District .....	8
Figure 3-1	Components of the Existing Waste Management System .....	10
Figure 3-2	Map of Existing and Proposed Facilities in PRRD.....	13
Figure 3-3	Sources of Garbage Disposed (2016 data estimates) .....	14
Figure 3-4	Estimated Waste Composition (by Weight) .....	15



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**List of Tables**

Table 1-1 Provincial Guiding Principles .....	1
Table 2-1 PRRD Population 2016 .....	7
Table 2-2 Dwellings .....	9
Table 3-1 Municipal Solid Waste Management Participants.....	16
Table 4-1 Promotion and Education: Estimated New Costs .....	18
Table 4-2 Reduction and Reuse: Estimated New Costs .....	19
Table 4-3 Recycling: Estimated New Costs .....	22
Table 4-4 Organic Waste Diversion: Estimated New Costs.....	26
Table 4-5 Construction, Demolition, and Land Clearing Waste Management: Estimated New Costs .....	28
Table 4-6 Texada Island Solid Waste Service: Estimated Cost.....	29
Table 4-6 Estimated New Diversion and Estimated Disposal (2018 – 2027) .....	30
Table 5-1 Resource Recovery Centre Capital Cost Estimate .....	33
Table 5-2 Annual Costs of the Proposed Residual Waste Management System.....	34
Table 5-3 Closed Landfills: Estimated Cost .....	36
Table 6-1 Invasive Plant Species Disposal: Estimated Cost.....	38
Table 6-2 Bylaws: Estimated Cost .....	40
Table 7-1 Monitoring and Measurement: Estimated Cost .....	42
Table 8-1 Proposed Plan Implementation Schedule.....	44
Table 9-1 Estimated Revenues and Expenditures.....	47
Table 10-1 Collaborative Decision Making and Dispute Resolution Procedure .....	50



## Glossary

<b>Advisory Committee</b>	The Solid Waste Management Plan Review Advisory Committee
<b>City</b>	The City of Powell River
<b>Disposal</b>	Landfilling
<b>Diversion</b>	Activities that divert waste materials away from disposal as garbage to alternatives such as recycling or composting. Does not include combustion of garbage to produce energy.
<b>CD</b>	Construction & demolition waste (garbage and recyclable materials generated by construction, demolition and renovation projects)
<b>EMA</b>	BC Environmental Management Act
<b>EPR</b>	Extended producer responsibility
<b>Export</b>	Shipping residual waste (garbage) to a landfill outside of the regional district boundaries for disposal
<b>(Waste) Generation</b>	The sum of all materials discarded that require management as solid waste, including garbage, recycling and composting. Does not include organic waste composted at home.
<b>ICI</b>	Industrial, commercial and institutional (does not include heavy industry)
<b>MOE</b>	BC Ministry of Environment
<b>MSW</b>	Based on BC's Environmental Management Act, municipal solid waste is refuse that originates from residential, commercial, institutional, demolition, land clearing or construction sources, or refuse specified by a director to be included in a waste management plan
<b>MRF</b>	Material recycling facility (recycling processor)
<b>Organic waste / organics</b>	Kitchen scraps, food waste, yard and garden waste
<b>Plan</b>	PRRD's Solid Waste Management Plan
<b>PRRD</b>	Powell River Regional District
<b>SWMP</b>	Solid Waste Management Plan
<b>Solid Waste Management Plan Review Advisory Committee</b>	The multi-stakeholder committee established to support the development of the Solid Waste Management Plan. Includes representatives of the PRRD, the City of Powell River, the Tla'amin Nation, the waste management industry, environmental organizations, the construction industry, business interests and the general public.
<b>Recycle BC</b>	Formerly MMBC (Multi-Material BC), the producer responsibility organization established to manage the residential printed papers and packaging EPR program
<b>SWMRRP</b>	PRRD's Solid Waste Management and Resource Recovery Plan
<b>Zero Waste</b>	Initiative to target zero or no waste in the Regional District





## 1 Introduction

In British Columbia, regional districts develop *Solid Waste Management Plans* under the provincial Environmental Management Act. These plans are long term visions of how each regional district would like to manage its solid wastes in accordance with the pollution prevention hierarchy. This *Plan* will be renewed on a 10-year cycle to ensure that it reflects the current needs of Powell River Regional District (PRRD) as well as current market conditions, technologies and regulations.

This document represents an update of the PRRD's 2013 *Solid Waste Management Plan* (SWMP) and once approved by the Province (along with any approval conditions), becomes a regulatory document for solid waste management and serves to guide the solid waste management related activities and policy development in the PRRD. In conjunction with regulations and operational certificates that may apply, this *Plan* regulates the operation of sites and facilities that make up the PRRD's waste management system (see Section 2.5).

As with the previous SWMP, this *Plan* covers all areas of the PRRD with the exception of Lasqueti Island (Electoral Area E). Due to its geographic relationship to the rest of the PRRD, the solid waste management activities for Lasqueti Island are an independent stream from the rest of the regional district. Consequently, a separate sub-plan has been prepared for Lasqueti Island.

### 1.1. Guiding Principles

The principles guiding the development and implementation of this *Plan* are illustrated in Table 1-1.

**Table 1-1 Provincial Guiding Principles**

1.	Promote <i>Zero Waste</i> approaches and support a circular economy
2.	Promote the first 3 R's (Reduce, Reuse and Recycle)
3.	Maximize beneficial use of waste materials and manage residuals appropriately
4.	Support polluter and user-pay approaches and manage incentives to maximize behaviour outcomes
5.	Prevent organics and recyclables from going into the garbage wherever practical
6.	Collaborate with other regional districts wherever practical
7.	Develop collaborative partnerships with interested parties to achieve regional targets set in plans
8.	Level the playing field within regions for private and public solid waste management facilities
9.	Conduct solid waste management activities in a manner that minimizes the potential for human-bear conflicts

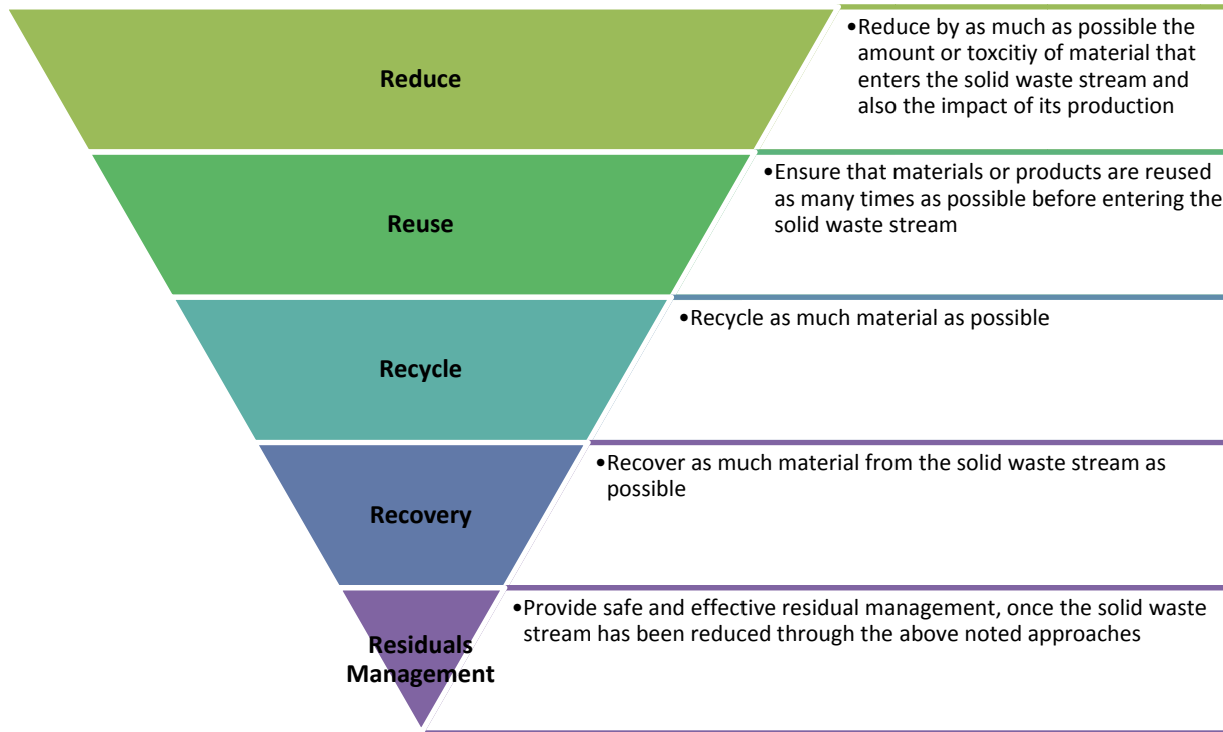
The first eight guiding principles are identical to those established by the Province in the *Guide to Solid Waste Management Planning* and were adopted by the Solid Waste Management Plan Advisory Committee (SWMPAC) meeting at their meeting held October 26<sup>th</sup>, 2016. The Committee added the 9<sup>th</sup> guiding principle at their meeting held November 1<sup>st</sup>, 2017 to strengthen the intention of this *Plan* to promote a solid waste management system that reduces the potential for human-bear conflicts.



## 1.2. Pollution Prevention Hierarchy, Targets and Goal

This *Plan* adopts the 5 R Pollution Prevention Hierarchy as illustrated in Figure 1.1.

**Figure 1-1 Pollution Prevention Hierarchy**



The *Plan's* proposed strategies and actions are laid out in Sections 3, 4 and 5, and are presented in the order of the hierarchy (reduce, reuse, recycle, and residual waste management). Implementation of the plan over its 10-year timeframe is expected to reduce the annual per person disposal rate from the 2016 disposal rate of 458 kg to the following targets:

- to 350 kg per person per year by 2022 (5 years into plan implementation)
- to 300 kg per person per year by 2027 (10 years into plan implementation)

Achieving these targets will also assist the Province in reaching their provincial disposal rate target of 350 kg per person per year.

The PRRD has adopted *Zero Waste* as its long range goal. As identified in the 2013 Plan:

*Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use.*

*Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and*



*not burn or bury them. Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health.*

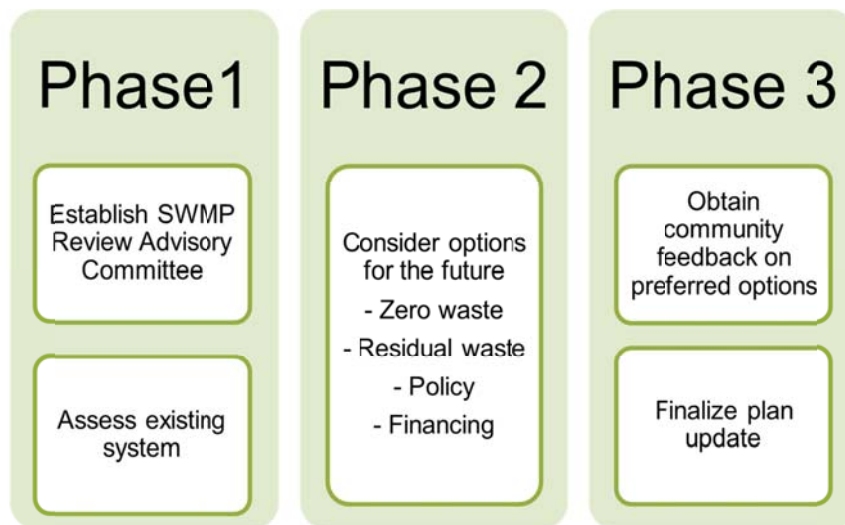
The path to *Zero Waste* is incremental. It is a long-term goal that will not be achieved during the timeline of this *Plan*, and perhaps not the next one. However, it is the intention of PRRD to continually reduce the amount of waste sent to disposal. *Zero Waste* is a both a goal and a process.

Additional goals for this *Plan* are presented in Section 1.4, Key Drivers.

### 1.3. Updating the Plan

The process to review the 2013 SWMP was conducted in three phases, as shown in Figure 1-2. The first phase was an assessment of the current system, the implementation status of the 2013 Plan, as well as the establishment of the SWMP Review Advisory Committee to assist in the *Plan* review and update. The second step was a review of options to address the PRRD's future solid waste management needs and the selection of preferred options. The final step was a community and stakeholder consultation process to obtain input into the selected options.

Figure 1-2 Planning Process



Early in the planning process, it was recommended by the SWMP Review Advisory Committee to incorporate the concept of “resource recovery” in the *Plan’s* title since the *Plan’s* goal is *Zero Waste*. Inherent in this goal is the recognition that the materials that we currently consume and discard are, in fact, resources. Because the actions embedded in this plan are intended to move the PRRD closer to this goal, this updated plan is called the *Solid Waste Management and Resource Recovery Plan*.



Several reports, as listed below, were prepared by the consultants to assist the SWMP Review Advisory Committee with their deliberations. These documents are available on the solid waste management page of the PRRD's website ([www.powellriverrd.bc.ca](http://www.powellriverrd.bc.ca)).

- Existing Solid Waste Management System (2016) (included as Appendix A of this *Plan*)
- Zero Waste Options
- Residual Waste Management Issues and Options
- Regulatory Approaches
- Powell River Transfer Station Site Selection
- Residual System Scenarios, Costs and Recommendations
- Proposed Plan Components and Estimated Costs.

#### 1.4. Key Drivers

The key drivers for developing this *Plan* were identified as part of the Phase 1 *Existing System Assessment* and reviewed and confirmed with the SWMP Review Advisory Committee at their first and second meetings. The key drivers were:

1. Determining how best to continue moving towards *Zero Waste*, including:
  - a) How to increase participation in available residential recycling services,
  - b) How best to collect and divert the organic portion of the waste stream, and
  - c) How to increase participation in diversion by the ICI and residential sectors.
2. Determining how best to manage residual solid waste (the waste requiring disposal) and the role of the PRRD.
3. Determining how to pay for historic and future solid waste management services and infrastructure.

Addressing these three key drivers are the goals of this *Solid Waste Management Plan*.



## 2 Background

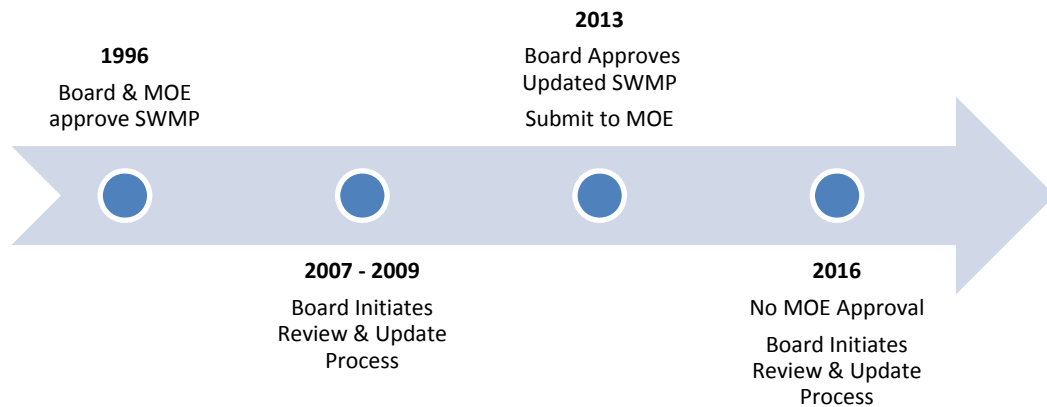
### 2.1 Plan History

The PRRD began preparing its first SWMP in 1986, three years before the MOE amended the *Waste Management Act* to require that all regional districts submit a *Solid Waste Management Plan* on or before December 31, 1995. The PRRD submitted their first SWMP by this deadline and the plan was approved by the Minister of Environment in 1996.

The overall goal of the original SWMP was to establish an affordable, reasonable, environmentally responsible waste management system for the *Municipal Solid Waste Stream* (MSW) in the PRRD. The plan proposed an integrated system of programs, services and facilities for handling the PRRD’s waste that would reduce the annual disposal rate from an estimated 920 kg per capita in 1990 to 460 kg per capita by 2000, representing a diversion rate of 50 %.

As illustrated in Figure 2-21 the PRRD initiated a process to review and update the 1996 SWMP in 2007. The *Plan* was under active development from 2007 through 2009 however the final updated *Plan* was not submitted to the MOE until 2013. Based on the baseline conditions presented in this *Plan*, by 2007 the annual disposal rate had declined to 539 kg per capita.

**Figure 2-1 Solid Waste Management Planning History**



The 2013 SWMP, based on a philosophy of “Working Towards Zero”, established a target annual disposal rate of 382 kg per capita by 2019. Figure 2-2 provides a summary of the programs and policies set out in the 2013 plan.



**Figure 2-2 Summary of Programs and Policies in the 2013 SWMP**

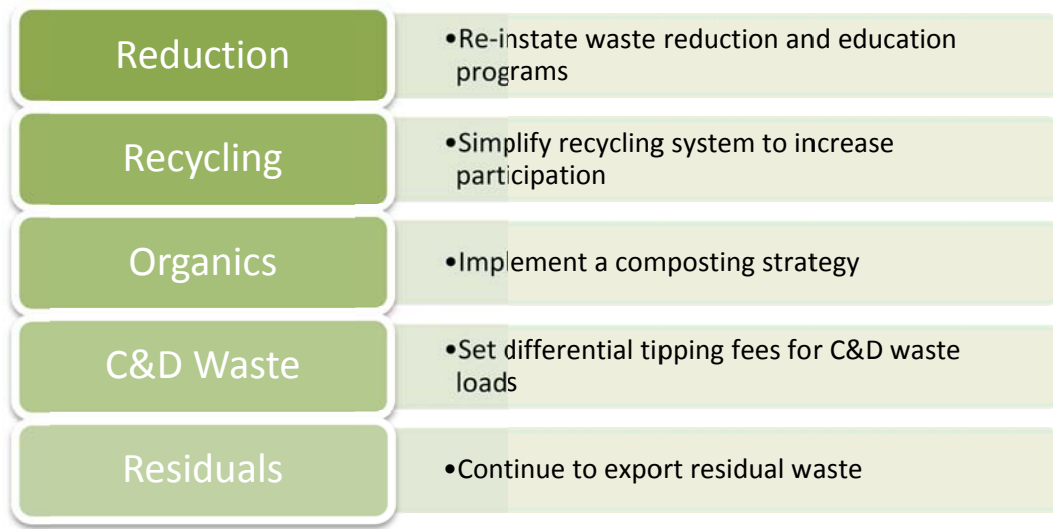
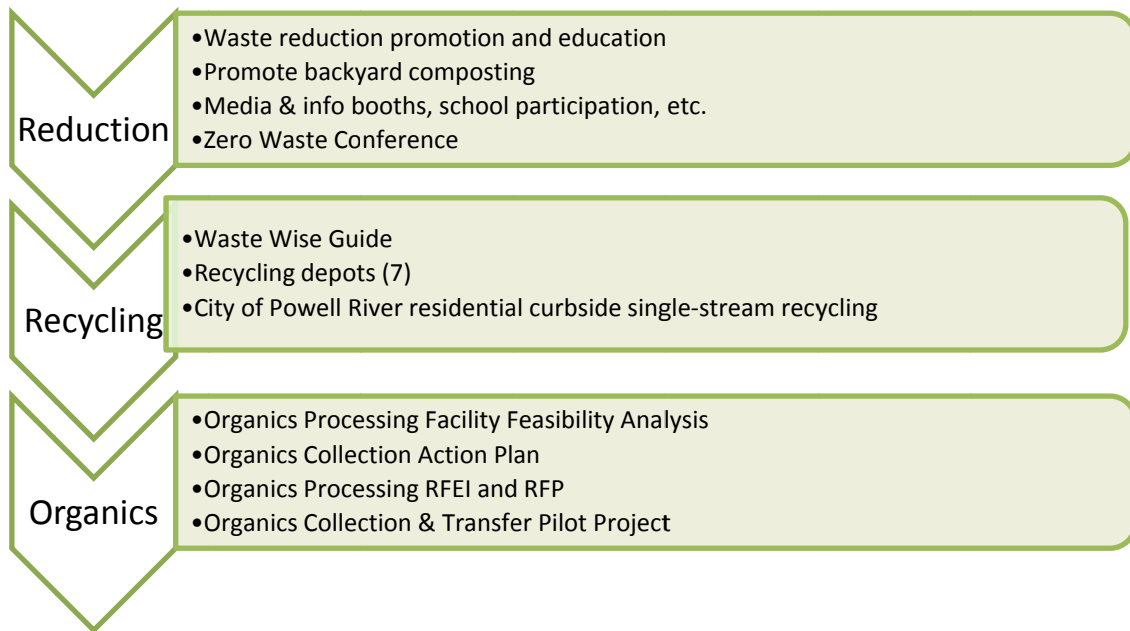


Figure 2-3 provides a summary of the 2013 SWMP actions that were implemented.

**Figure 2-3 Implementation Status of the 2013 SWMP**





## 2.2 Plan Area

The PRRD is located in on the southern coast of British Columbia. It is bound by the Sunshine Coast Regional District to the south, the Squamish Lillooet Regional District to the northeast, the Strathcona Regional District to the northwest, and the Salish Sea (Georgia Strait) to the west. It is accessible from the Lower Mainland/Sunshine Coast and Vancouver Island via ferry.

The PRRD covers 5,075 km<sup>2</sup> (2016 boundaries<sup>1</sup>) and includes the City of Powell River, three electoral areas ('A', 'B', and 'C') situated around the City on the mainland, and two island electoral areas – Texada Island (Area 'D'), which is linked by ferry service, and Lasqueti Island (Area 'E'), which is linked by a passenger-only ferry service to Vancouver Island. There are also the Tla'amin Nation's lands and a portion of the Sechelt Indian Governmental District<sup>1</sup>. Please refer to Figure 2-4 for the boundaries of these areas. The population density is 4.0 people per square kilometre.<sup>1</sup>

The PRRD experiences a moderate coastal climate, with daily average temperatures of 4°C in January temperature of 18°C in July. The area receives little snowfall; the heaviest rainfall occurs in November (160.3 mm). Winds are generally from the west in late summer and from the east during the remainder of the year.<sup>2</sup>

## 2.3 Population

As shown in Table 2-1, the 2016 Census population count for the PRRD was 20,070, including the City of Powell River (the City), electoral areas and Tla'amin Nation<sup>1</sup>. This represents an increase of 0.8% since 2011. Population projections indicate that the population over the next ten years is not expected to increase significantly.<sup>3</sup>

**Table 2-1 PRRD Population 2016<sup>4</sup>**

Area	2016 Census	% of PRRD Total
City of Powell River	13,157	65.6%
Electoral Area A, north of City (excluding Tla'amin Nation)	1,105	5.5%
Tla'amin Nation	707	3.5%
Electoral Area B	1,541	7.7%
Electoral Area C	2,064	10.3%
Small portion of Sechelt Indian Government District	21	0.1%
Electoral Area D – Texada Island	1,076	5.4%
Electoral Area E – Lasqueti Island	399	2.0%
<b>Total Population of Powell River Regional District</b>	<b>20,070</b>	<b>100%</b>

<sup>1</sup> Statistics Canada, Census Profile, 2016 Census

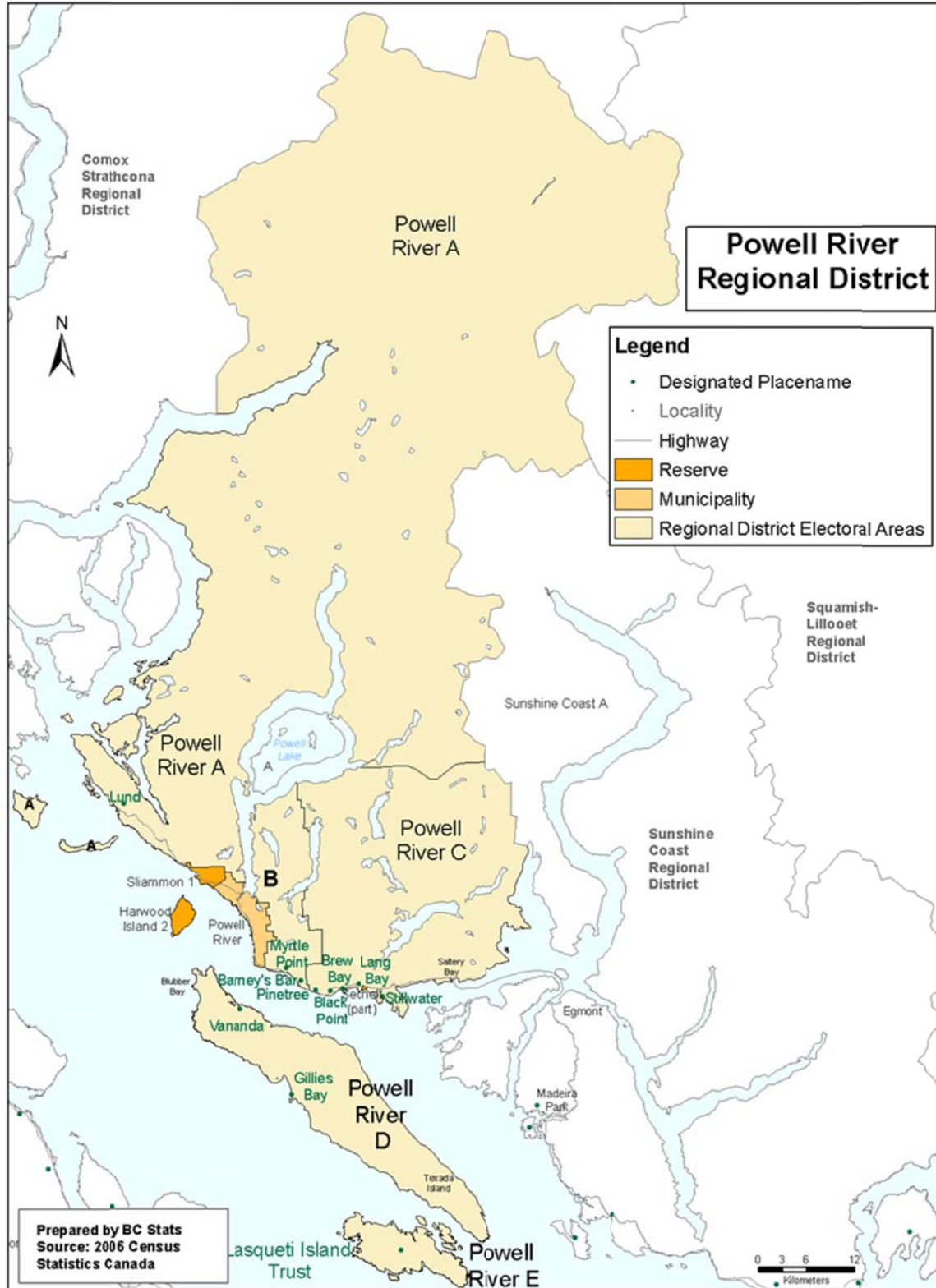
<sup>2</sup> Climate data from <http://www.climate.weatheroffice.ec.gc.ca>.

<sup>3</sup> WM Population Analysis, 2012 (as provided by L. Roddan, PRRD Planner)

<sup>4</sup> Statistics Canada, Census Profile, 2016 Census (<http://www12.statcan.gc.ca/census-recensement/2016/dp->)



Figure 2-4 Map of Powell River Regional District







## 2.4 Economic Data

As shown in Table 2-2, in 2016 there were 9,410 households in the PRRD; of which only 9% were apartments<sup>3</sup>. The average number of people per household was 2.1, below the BC average of 2.4.<sup>3</sup>

**Table 2-2 Dwellings**

Occupied private dwellings by structural type of dwelling	2016
Single-detached house	7,405
Apartment in a building that has five or more storeys	20
Other attached dwelling	1,570
Semi-detached house	275
Row house	125
Apartment or flat in a duplex	305
Apartment in a building that has fewer than five storeys	820
Other single-attached house	40
Movable dwelling	410
<b>Total - Occupied private dwellings by structural type of dwelling - 100% data</b>	<b>9,410</b>

According to BC Statistics' census data, the main industries (by labour force) for the PRRD are logging and forest products, manufacturing, retail trade, health care and social assistance, and paper manufacturing.<sup>5</sup> Powell River is also home to a large pulp mill.

<sup>5</sup> Source: 2006 Census Profile of Powell River Regional District, BC Stats ([www.bcstats.gov.bc.ca/data/cen06/profiles/detail\\_b/59027000.pdf](http://www.bcstats.gov.bc.ca/data/cen06/profiles/detail_b/59027000.pdf))

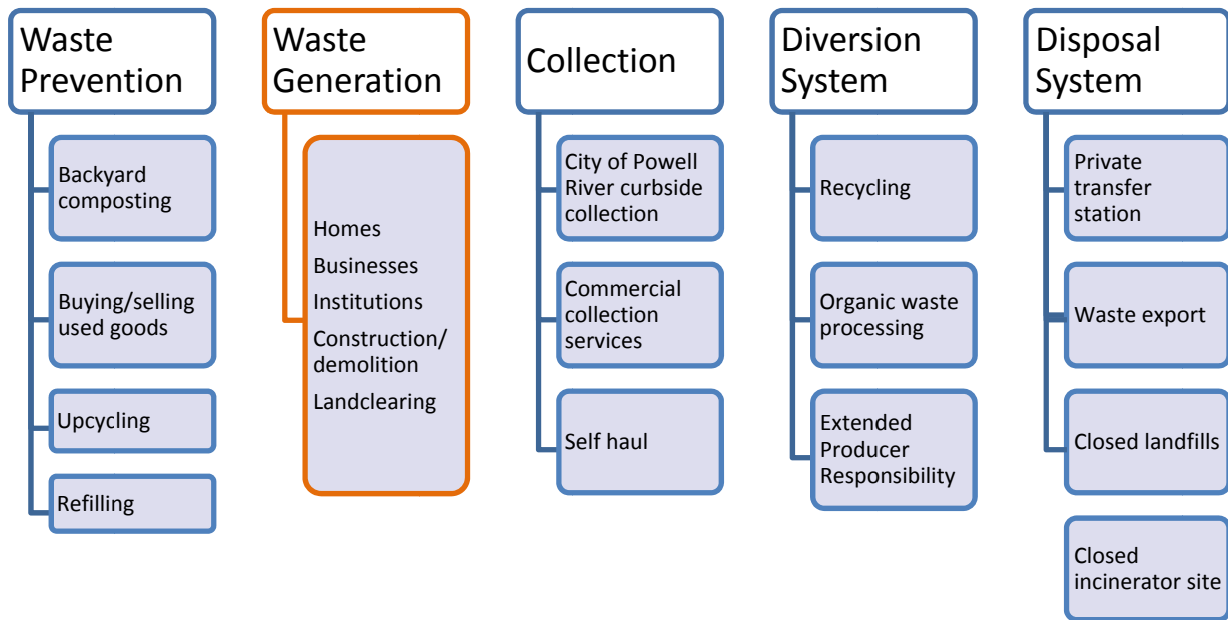


### 3 The Solid Waste Management System in PRRD

Figure 3-1 outlines the key components of the PRRD current system for managing municipal solid waste, from those initiatives that prevent the creation of waste to collection to diversion, and then finally, disposal. Waste generators are also included in this figure as a key component of the system since these are the sources of the solid waste that must be managed through collection, diversion and disposal.

A complete description of the existing solid waste management system can be found in Appendix A.

**Figure 3-1 Components of the Existing Waste Management System**





### 3.1 Facilities

Municipal solid waste in the PRRD can be directed for management to any authorized site or facility identified in the *Plan*. Authorized sites or facilities are shown on Figure 3-2 and include:

#### Existing Facilities

- The privately owned and operated Augusta Recycling and Waste Transfer Station: This site is currently operating in the PRRD and has a contract with the PRRD to receive *Municipal Solid Waste* (MSW) from waste generators in the PRRD. It is proposed that during the implementation of this *Plan*, that this transfer station be replaced with a publicly-owned Resource Recovery Centre (RRC). (See Section 5 for additional details.) Once the RRC is operational, it is anticipated that Augusta Recycling will continue to act as a private transfer station for commercial-sized loads of construction and demolition waste, as well as a private scrap metal collection site. The site will cease to receive MSW from the residential and industrial, commercial and institutional (ICI) sectors.
- Texada Island Metal Depot
- PRRD Recycling Depots:
  - Town Centre (to be moved to the RRC once it is operational)
  - Lund
  - Tla'amin
  - Black Point Store
  - Gilles Bay, Texada Island
  - Van Anda, Texada Island (satellite depot to Gilles Bay).

#### Closed Facilities

- City of Powell River MSW Incinerator and Residue Storage Facility
- Airport Landfill Site (final closure pending)
- Squatters Creek Landfill Site (final closure pending).

#### Proposed Facilities

- Resource Recovery Centre - this site is intended to replace the existing Town Centre recycling depot and privately-contracted MSW transfer station. For details on the development of this site see Section 6.3
- Privately owned composting facility for food and yard waste (does not exist yet, no site currently under consideration)
- Privately owned wood waste management site for chipping and/or burning utilizing technology that minimizes particulate pollution (does not exist yet, no site currently under consideration).

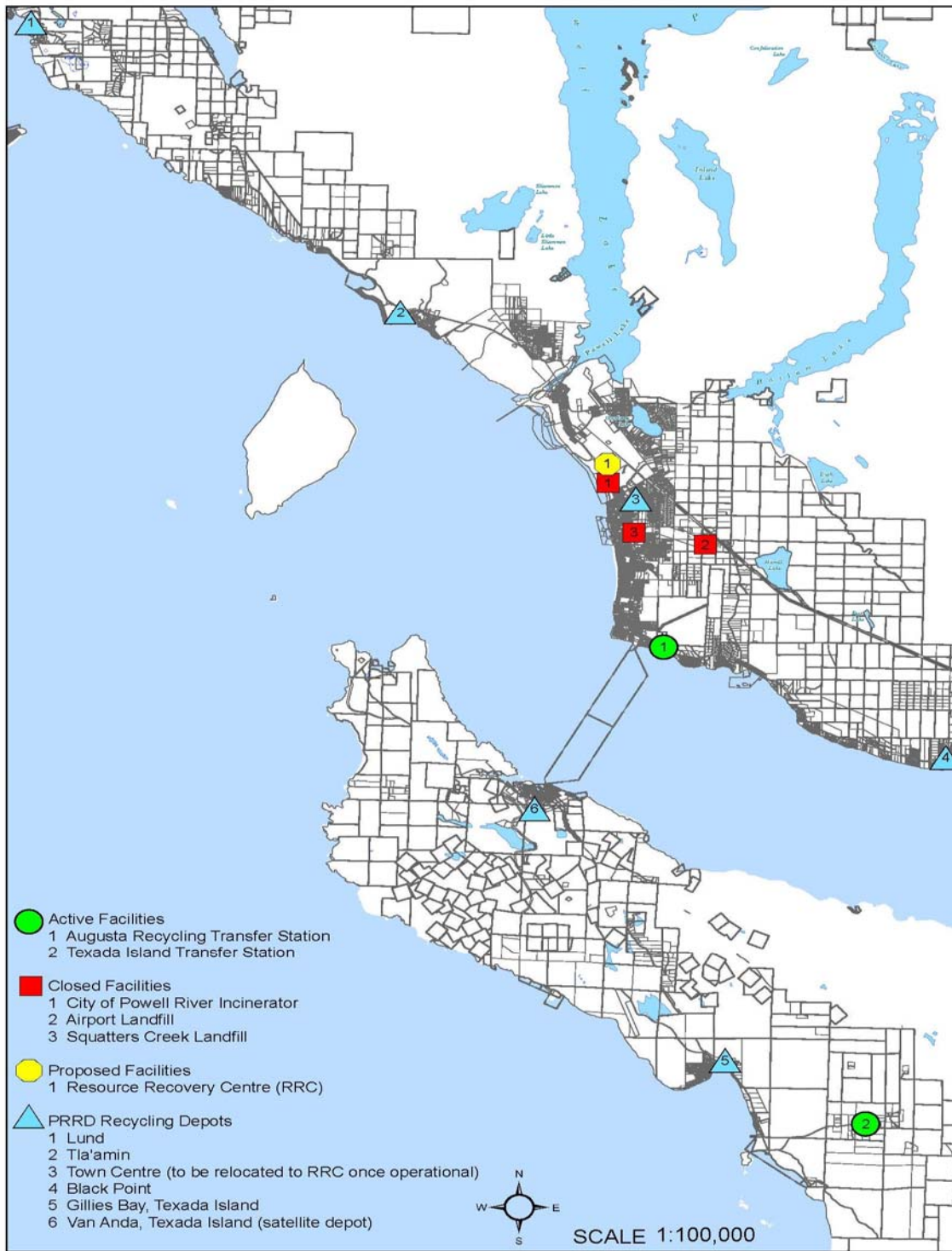


### Facilities outside the PRRD

- All MSW, including privately managed C&D waste is exported for disposal in landfills outside the PRRD. MSW disposal managed by PRRD (through a contract with the receiving landfill) is shipped to a landfill site that meets or exceeds BC regulatory requirements. Currently, this landfill is the Roosevelt Landfill owned by Republic Waste Systems (Rabanco), although alternate landfills may be used in the future based on the results of a competitive procurement process for landfill capacity
- Until a privately owned composting facility for food and yard waste is established within PRRD boundaries, the PRRD intends to utilize processing capacity located outside the PRRD, ensuring that the processing facility has appropriate authorizations in place and/or is approved under a *Solid Waste Management Plan* that meets or exceeds BC legislation.



Figure 3-2 Map of Existing and Proposed Facilities in PRRD





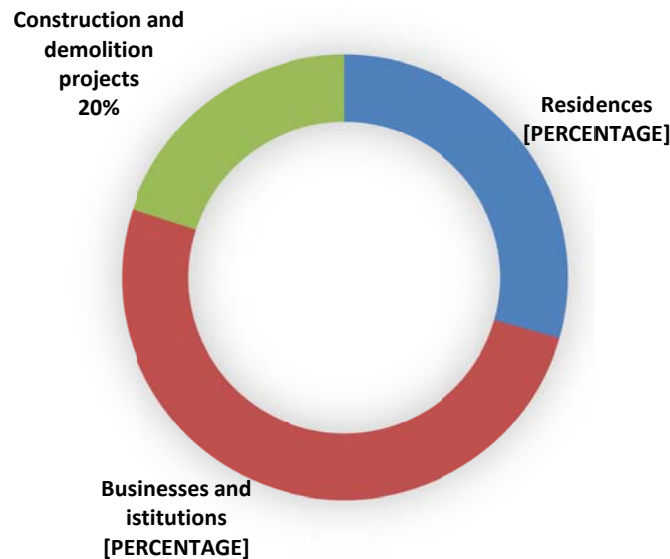
### 3.2 Disposal Data

Scale house records at Augusta Recyclers indicate that approximately 9,600 tonnes of solid waste are disposed annually in PRRD (2016 data). This includes solid waste from residential, commercial, institutional, construction and demolition sources. On a per person basis, PRRD disposed of 478 kg in 2016 and 458 kg in 2015. This is a 50% reduction in the amount of waste since 1990.

#### 3.2.1 Sources

Figure 3-1 shows the estimated sources of garbage received at the Augusta transfer station in Powell River. Roughly half of the garbage, by weight, comes from businesses and institutions (schools, hospital, etc.); with the remaining garbage coming from homes (29%) and construction/demolition projects (20%).

**Figure 3-3 Sources of Garbage Disposed (2016 data estimates)**



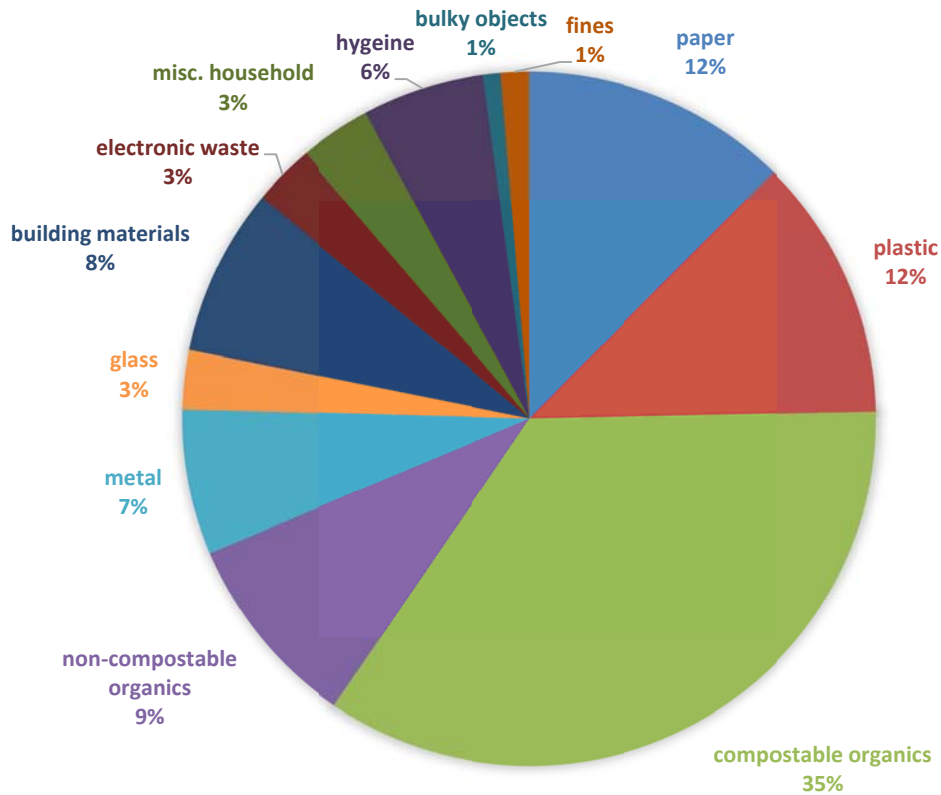
In 2016, approximately half of the garbage was delivered directly by residents and businesses, and half by commercial and municipal garbage trucks.



### 3.2.2 Waste Composition Data

Figure 3-4 provides a reasonable estimate of the composition of waste currently disposed in PRRD. This data is consistent with most of BC's regional districts that do not have a food waste disposal ban in place.

Figure 3-4 Estimated Waste Composition (by Weight)





### 3.3 Waste Management System Participants

Table 3-1 provides a list of the various organizations that contribute to MSW management in the PRRD.

**Table 3-1 Municipal Solid Waste Management Participants**

Who	Roles in Solid Waste Management
Federal Government	<ul style="list-style-type: none"> <li>Regulates waste management facilities under federal jurisdiction</li> </ul>
Provincial Government	<ul style="list-style-type: none"> <li>Approves <i>Solid Waste Management Plans</i></li> <li>Authorizes discharges to the environment through permits and operational certificates</li> <li>Responsible for enforcement of Provincial regulations and the conditions set out in discharge permits and operational certificates</li> <li>Various ministries have a number of other regulatory authorities related to waste management</li> </ul>
Powell River Regional District (Board and staff)	<ul style="list-style-type: none"> <li>Develops plan to provide big picture oversight of waste management in the PRRD</li> <li>Through plans and plan implementation (including bylaws), works to meet waste disposal goals and targets and ensures that the community has access to waste management services</li> <li>Coordinates with the City of Powell River and Tla'amin Nation in service delivery</li> <li>Ensures that legislative and policy requirements are followed, including monitoring and reporting</li> <li>Supports the provision of Product Stewardship programs in the PRRD</li> <li>Provides waste management related education</li> </ul>
City of Powell River	<ul style="list-style-type: none"> <li>Provides waste collection services to residents in the City of Powell River</li> <li>Partners with PRRD in the implementation of the <i>Solid Waste Management Plan</i></li> </ul>
Tla'amin Nation	<ul style="list-style-type: none"> <li>Provides waste management services to residents and business located on Tla'amin Lands</li> </ul>
Product Stewardship Producers and Agencies	<ul style="list-style-type: none"> <li>Ensures reasonable and free consumer access to collection facilities</li> <li>Collects and processes stewarded products</li> <li>Coordinates local government delivery as a service provider where applicable</li> <li>Provides and/or funds education and marketing</li> <li>Provides deposit refunds to consumers (where applicable)</li> <li>Monitors and reports on key performance indicators such as recovery rates to the Province on a regional district basis (when possible)</li> </ul>
Private Sector	<ul style="list-style-type: none"> <li>Provides recycling and waste management collection services to residents and businesses</li> <li>Provides processing services</li> </ul>
Non Profit Sector	<ul style="list-style-type: none"> <li>Provides <i>Zero Waste</i> related promotion and education</li> <li>Engages in and promotes reuse and upcycling</li> </ul>
Residents and Businesses	<ul style="list-style-type: none"> <li>Responsible for carrying out proper waste reduction, recycling and disposal activities</li> </ul>
Neighbouring Jurisdictions	<ul style="list-style-type: none"> <li>Identifies and engages in opportunities for collaboration and cooperation through the Coast Waste Management Association and Association of Vancouver Island and Coastal Communities</li> <li>Agrees to receive PRRD's MSW on an emergency basis (Comox Strathcona Waste Management)</li> </ul>





## 4 Zero Waste Strategy

There are two strategies described in this *Plan*: A *Zero Waste Strategy* and a *Residual Waste Strategy*. The actions outlined in these two strategies are to be implemented over the next 10 years and are intended to address the main issues facing PRRD today (described as *key drivers* in Section 1.4):

- d) How to increase participation in available residential recycling services;
- e) How best to collect and divert the organic portion of the waste stream;
- f) How to increase participation in diversion by the ICI and multi-family sectors; and
- g) How best to manage residual solid waste (the waste requiring disposal), and what should the role of PRRD be.

Collectively, these strategies and actions will move PRRD closer to its long-term goal of *Zero Waste*, while doing so in a manner that is financially sustainable.

The recommended actions for the *Zero Waste Strategy* are described below.

### 4.1 Promotion and Education

Promotion and education associated with local solid waste services is largely done through the contracted educators, Let's Talk Trash. The PRRD has an annual contract with Let's Talk Trash and the tasks undertaken each year vary based on new initiatives or areas of focus. For instance, when the new recycling depots were opened, Let's Talk Trash's PRRD work was largely focused on establishing good recycling habits at the new depots. Currently, their focus is on creating good organic waste recycling habits and increasing participation in the organic waste pilot program. The City also works with Let's Talk Trash for communications and technical support for the curbside program.

This *Plan* proposes that the current levels of promotion and education be maintained, with the focus changing annually as new programs, policies and infrastructure are developed, as it is now.

Proposed new promotion and education initiatives to be implemented by PRRD are:

- Create a *Zero Waste* Education Room at the Resource Recovery Centre for visits by school groups and other interested parties, workshops and lectures
- Develop performance measurement tools and practices to ensure that communications are reaching and affecting their intended audiences. Although performance objectives and measurement approaches should be incorporated into all new and on-going initiatives, an effectiveness review every five (5) years is recommended to assess audience reach and impact.

The estimated new PRRD costs associated with promotion and education are presented in Table 4-1.

**Table 4-1 Promotion and Education: Estimated New Costs**

Actions	Estimated Capital Cost	Estimated Operating Cost
Zero Waste Education Room	Included in RRC development costs (see Table 5-1)	Included in RRC operating costs and annual promotion/education budget.
Effectiveness Review	\$0	\$5,000 per review

## 4.2 Reduction and Reuse

Reduction and reuse are already common themes in communications and events produced by Let's Talk Trash Team. Additionally, there is a significant amount of reuse and upcycling activity within the community.

Waste reduction and reuse will continue to be promoted through education campaigns and influenced by the region's high tipping fees. Additionally, it is proposed that reuse will be incorporated into the activities available at the RRC. In particular, the site design will include dedicated indoor space where reusable goods can be set aside for reuse or upcycling. It is envisioned that the operation of the reuse/upcycling space at the RRC will be done by local organizations and may include selling the recovered/upcycled goods. Encouraging the "reuse mindset" will be done through coordinating and promoting events such as repair cafes and upcycling workshops.

Reduction of single-use plastic shopping bags will be targeted through a City-led *Voluntary Plastic Bag Reduction Campaign*. The intention of the campaign is to dramatically reduce the consumption of single-use bags in Powell River through reducing their availability, and to encourage consumers to bring their own bags shopping. Although the campaign has yet to be designed, one design concept under consideration is:

- The City (or its contractors) would work with local retailers to voluntarily stop the distribution of "free" carry bags.
- For those retailers who sign onto the program, they would charge customers for each single-use bag (e.g. 25 cents).
- Of this amount, the retailer would retain a portion of the revenue (e.g. 50%) and the other portion would be remitted to the City to create a *Zero Waste Fund*.
- The *Zero Waste Fund* would be used to help encourage and support local initiatives aiming to reduce, reuse or recycle waste within the community (encouraging a closed-loop economy).
- Applications for funding would be reviewed and considered by a committee.



The estimated new PRRD costs associated with reduction and reuse are presented in Table 4-2.

**Table 4-2 Reduction and Reuse: Estimated New Costs**

Actions	Estimated Capital Cost	Estimated Operating Cost
Reuse Activities at the RRC	Included in RRC development costs (see Table 5-1)	No direct costs. To be operated by community organizations.
Upcycling and repair workshops	None	None. Incorporated into the regular promotion / education budget.
Reuse workshops	None	No new costs. Incorporated into educators' contract.

### 4.3 Recycling

Recycling is a well-established behaviour in the PRRD, with the following services in place:

- PRRD recycling depots
- City curbside collection of recyclables
- Commercial collection of recyclables through Sunshine Disposal
- Private recycling drop-off sites
- Private scrap metal yards.

However, participation levels in available services could be improved, which in turn, would reduce waste to disposal and improve the efficiency of the services. The recycling actions of the *Zero Waste Strategy* are:

- Improving participation in the City's curbside recycling program
- Improving recycling in multi-family buildings
- An assessment of curbside collection services for some electoral areas
- Encouraging more recycling by the ICI sector
- A Resource Recovery Centre that will expand the range of recycling and reuse opportunities available.



#### **4.3.1 Improving Participation in the City's Curbside Program**

The City recognizes the need to improve participation in the City's curbside collection service. Improving participation will:

- improve the overall efficiency of the collection program
- reduce traffic to the transfer station
- provide a direct incentive to recycle and source separate organic waste, and
- reduce worker injuries.

In 2017-2018, the City will pilot organic waste collection (food waste and yard waste). The objective of this pilot is to assess the potential for full-scale collection of organic waste at the curb. The City is considering including one can of garbage as their "base rate" and eliminating the need to purchase a tag for every bag of garbage. They are also considering automated collection.

The City anticipates that the curbside recycling program will become eligible for Recycle BC (formerly MMBC) financial incentives, which should offset some of the operating costs of the collection service.

The City intends to, regardless of the final design of their curbside service, incorporate Bear Smart features into their curbside service, to the extent that they are considered financially viable to the City. At a minimum, these will include enforcement requirements and WildSafe BC education initiatives.

#### **4.3.2 Improving Recycling in Multi-Family Buildings**

Once the automated cart program is in place, the City will consider offering recycling and organic waste collection services to multi-family buildings that can be serviced with cart-based collection (i.e. if space allows).

The City will develop space guidelines for new multi-family developments to ensure that space for 3-stream waste collection (garbage, recycling, and organics) is incorporated into building designs. Space requirements have been developed for other municipalities in BC, which can be used as a template for use by the City. The City will also consider incorporating these requirements into their development or building bylaws.

#### **4.3.3 An Assessment of Curbside Collection Services for Some Electoral Areas**

Curbside collection of recycling and organics typically get better participation and diversion than depot-based collection, and curbside services can often be cost-competitive with the provision of staffed depots services when financial incentives from Recycle BC are incorporated.



Consequently, this *Plan* recommends that the PRRD assess the provision of collection services<sup>6</sup> to homes in the electoral areas on the mainland with a view to improving participation in recycling and organic waste diversion, and to reduce the traffic load at the transfer station. The assessment process could be as follows:

- i) Determine if Recycle BC would be willing to fund curbside recycling in the electoral areas in lieu of depots (as this will impact on the potential cost to each household for the service).
- ii) Take information regarding the design and cost of curbside services in similar sized communities out to the community to gauge level of interest. (Note that provision of curbside services presumes removal of recycling depots in areas where curbside would be provided.)
- iii) If there is a reasonable level of interest in some or all areas, put out a RFP for collection services for those parts of the PRRD that are interested in establishing a collection service.
- iv) Take the results of the RFP process out to the community for their feedback.
- v) If feedback is positive, award collection contract. If pursued, engage with WildSafe BC on the collection service bylaw.

If the PRRD becomes involved in the provision of curbside services, the PRRD will aim to coordinate with the City of Powell River and Tla'amin Nation to maximize the consistency in service delivery and communications and to improve the overall effectiveness of recycling collection programs provided by each organization.

#### **4.3.4 Encourage More Recycling by the ICI Sector**

The ICI sector contributes an estimated 51% of the waste disposed in the PRRD. Consequently, there is a significant opportunity to reduce the amount of waste sent to disposal by encouraging more recycling by this sector.

To drive the use of already available recycling services by the ICI sector (i.e., collection and depot services), it is proposed that the PRRD:

- Implement disposal restrictions on recyclables in commercial garbage. The disposal restriction would be enforced at the transfer station.
- Have and promote differential tipping fees (lower cost to drop off ICI recycling than garbage).
- Assist haulers and recycling companies with promoting recycling to the ICI sector. PRRD will consult with local waste haulers and generators on an on-going basis to assess the type of assistance that would be the most useful.

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<sup>6</sup> Including curbside collection. Other collection models may also be considered.



Additionally, it is recommended that the City develop space guidelines for new commercial and institutional developments (or significant redevelopments) to ensure that space for three-stream waste collection (garbage, recycling, and organics) are incorporated into building designs. Like with multi-family building (see Section 4.3.2), waste management space requirements for different types of businesses (e.g. offices, restaurants) have been developed by other municipalities in BC, which can be used as a template for use by the City. The City could also consider incorporating these requirements into their development or building bylaws.

#### 4.3.5 Recycling at the Resource Recovery Centre

A Resource Recovery Centre (RRC) will be constructed at the former site of the incinerator on Marine Avenue (see Section 5 for more details on the redevelopment of the Marine Avenue site and the construction of the RRC). The RRC will be a central location for recycling, EPR programs and reuse and will replace the Town Centre Depot. Recycling opportunities at the RRC will expand as new opportunities for diversion are identified. Recycling will be further supported by the enforcement of disposal bans on recyclable materials at the RRC’s commercial transfer station.

#### 4.3.6 Estimated Cost of Recycling Actions

Table 4-3 provides the estimated new costs to the PRRD (costs above those currently in the PRRD’s solid waste management budget) associated with the recycling actions listed above.

**Table 4-3 Recycling: Estimated New Costs**

Actions	Estimated Capital Cost	Estimated Operating Cost
Improving participation in the City’s curbside recycling program	All costs associated with the City’s curbside collection services will be borne by the City (and recovered through grants and/or user fees)	All costs borne by the City. Cost of three-stream cart-based collection in other BC communities generally range from \$150 - \$250 per home per year after receipt of Recycle BC financial incentives
Improving recycling in multi-family buildings	All costs borne by the City (and recovered through user fees)	All costs borne by the City (and recovered through user fees)



Actions	Estimated Capital Cost	Estimated Operating Cost
Assess curbside collection services for electoral areas	\$0 (for assessment)	<p>\$15,000 (one time) for assessment (consulting fees and community consultation costs)</p> <p><i>Per household costs to provide curbside collection will be developed and presented to community as part of the assessment.</i></p>
Encourage more recycling by the ICI sector through disposal bans	\$0	<p>\$2,000 for promotion in Year 1</p> <p>No additional on-going costs (ongoing communications to be incorporated into annual promotion/education budget)</p>
Encourage more recycling by engaging with haulers and ICI generators	\$0	Associated costs incorporated into annual promotion/ education budget
Develop space guidelines for three-stream waste collection for new multi-family and ICI developments	\$0	All costs borne by City
Recycling at the Resource Recovery Centre	Included under Residual Waste Management costs (See Table 5-1)	Unknown. Dependent on recycling markets and funding received from EPR agencies.



#### 4.4 Extended Producer Responsibility (EPR)

Extended Producer Responsibility (EPR) is a provincial policy tool that aims to shift the responsibility for end-of-life management of products to the producer (manufacturers, retailers and importers), 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 Environmental Management Act. 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.

PRRD collects EPR products on behalf of a number of EPR organizations at their recycling depots. PRRD is also a member of the BC Product Stewardship Council, a body that advocates on behalf of local government for effective product stewardship programs. Additionally, PRRD staff are engaged in consultation and discussions with stewardship agencies in their program development process.

The range of products managed through EPR programs has expanded significantly in the last decade and the PRRD is relatively well-serviced with take back locations – both PRRD and private sites – for products regulated under the Recycling Regulation.

Under this *Plan*, PRRD will continue to provide EPR collection services at their recycling depots and will aim to make the RRC a convenient “one stop drop” for residents to return EPR products. Note that not all EPR programs will be available at the RRC. Private sector collection sites, such as bottle depots and return-to-retail, will continue to play a critical role in the collection of EPR-designated products.

The following additional actions to encourage improved and expanded EPR services in the PRRD are also recommended:

- Lobby the Provincial Government and BC Producer Responsibility (EPR) organizations to financially compensate collectors to a level that is commensurate with the level of service provided. Currently, a number of programs underfund or provide no funding to collectors
- Lobby senior levels of government to expand EPR, particularly for the ICI component of packaging and printed paper (PPP).

There are no new costs associated with EPR.

#### 4.5 Organic Waste Diversion

It is estimated that one third of what is disposed in the garbage is organic waste. The diversion of this type of waste away from landfilling to alternatives such as composting and animal feed will reduce the amount of waste sent to landfill, reduce climate change impacts associated with the landfilling of organic waste, and potentially save costs on waste export (sending garbage to a landfill located outside the PRRD).





There is an organic waste diversion pilot project currently underway that includes:

- An organic waste drop-off at the Town Centre Depot
- Commercial food waste collection by Sunshine Disposal
- An organic waste transfer station set up at Sunshine Disposal
- Composting of the collected organics at Salish Soils in Sechelt.

The objective of the pilot is to establish good organic waste source separation behaviours and to continually increase the amount of organic waste collected to achieve a volume that warrants the construction of a local composting facility.

As noted earlier, the City of Powell River is piloting a curbside collection of organic waste.

The results of the PRRD and the City's pilot projects should provide a reasonable estimate of the potential for the area to support its own composting facility. It is anticipated that the composting facility will be privately built and operated, but supported through the following initiatives.

- i. Curbside collection of organic waste in areas where municipal/PRRD garbage and recycling collection services are provided (currently, this is only in the City, but new curbside service areas may be in place in the future). Implementation of this service will serve as an excellent opportunity to reinforce proper waste storage behaviours and update bylaw requirements that minimize the potential of conflicts with animals such as bears. The cost of three-stream collection in other BC communities generally ranges from \$150 - \$250 per home per year (for garbage, recycling and organics collection)
- ii. A disposal ban on ICI organic waste in the garbage, enforced at the transfer station, to drive organic waste diversion at area businesses and institutions
- iii. Depot-based organic waste collection at the Resource Recovery Centre (in addition to the curbside residential and commercial collection services)
- iv. A contract with the local composting facility to receive and process the organic waste collected through local government operated collection programs (curbside and depot)
- v. If warranted, the City may implement a ban on the collection of organic waste in curbside garbage collection carts to ensure a high level of participation in the organic waste collection service. Prior to considering such a ban, the City will assess participation levels in the organic waste diversion program, which may include determining set out rates and composition analysis of curbside garbage (see Section 7.4 for additional information on future waste composition studies)
- vi. On-going promotion of organic waste diversion to the ICI sector.

The estimated new PRRD costs associated with organic waste diversion are presented in Table 4-4.

**Table 4-4 Organic Waste Diversion: Estimated New Costs**

Actions	Estimated Capital Cost	Estimated Operating Cost
Curbside collection of organic waste	All costs associated with the City's curbside collection services will be borne by the City	Organic waste collection would be part of a curbside service that includes garbage and recycling as well. Cost of 3-stream cart-based collection in other BC communities generally range from \$150 - \$250 per home per year, including the receipt of Recycle BC financial incentives
Disposal ban on ICI organic waste	\$0	\$10,000 (one time) for legal costs for bylaw amendments, stakeholder workshops, informational materials
Depot based collection of organic waste	\$0	\$12,000 (annually) for transportation and processing once the City curbside program and the ICI ban are in place (assumes 50 tonnes per year and twice weekly removal of container)
Composting facility contract	\$0	\$15,000 to establish a contract Tipping fees would be paid directly by the collectors. Tipping fee likely to be \$125-150/tonne for any organic waste containing food waste
Promotion targeting the ICI sector	\$0	Incorporated into annual promotion/education budget

#### 4.6 Construction, Demolition, and Land Clearing Waste Management

Waste from construction and demolition projects (referred to as CD waste) is estimated to represent 20% of the waste disposed in the PRRD. CD waste consists primarily of wood, and to a lesser extent, roofing materials, drywall, plastic, metal, cardboard and other CD related materials. CD waste is received for disposal at Augusta Recyclers and is managed directly by Augusta (i.e. it is not part the contract with PRRD). This waste was exported to a private inert waste landfill for several years but in recent few years the CD waste has been stockpiled at Augusta's site. Augusta has committed to the Ministry of Environment to remove the stockpile to a landfill for disposal.



Presently, there are no facilities in the PRRD that receive leftover or used construction materials for resale, nor are there facilities to receive mixed loads of construction / renovation debris for subsequent sorting to recover the recyclable components.

The following proposed CD waste diversion actions aim to reduce the amount of CD waste sent to landfill, and to ensure that there is responsible disposal of residual CD waste:

- i. Establish and apply variable tipping fees to encourage source separation and diversion of recyclable components of CD waste.
- ii. Enact and enforce disposal bans on readily recyclable components. Note that these are often the same restrictions applied to commercial loads of garbage (e.g. cardboard, metal). As viable and stable recycling markets/alternative uses are identified for other materials and products in the CD waste stream, these materials will be considered for a disposal ban.
- iii. Pilot the diversion of clean wood waste to local grinding operation. If the pilot proves to be successful, ban clean wood waste from disposal as mixed CD waste.
- iv. Encourage local reuse/upcycling/recycling endeavours by providing space at RRC for self-supporting pilot projects, including bench scale testing of emerging technologies (as appropriate to the space that is available).
- v. Establish a facility for the sale of reusable CD waste-based resources. It is anticipated that such a facility could be located at the Resource Recovery Centre. However, if space or operational costs make this not viable, the PRRD would actively support the establishment of a similar operation by a local business or non-profit organization.
- vi. The City will consider implementing a requirement for construction/demolition contractors to submit *Solid Waste Management Plans* that include minimum recycling requirements. This is generally done when building and demolition permits are applied for and would need to be undertaken by the City of Powell River as well as the PRRD. In the PRRD, where building permits are not required, the Planning Department will provide information on local waste management requirements, including disposal bans and local opportunities for recycling, reuse and disposal. The information would be supplied to contractors at the City to assist in development of *Solid Waste Management Plans* for their projects.
- vii. Promote locally available diversion opportunities to contractors and do-it-yourself projects.

To manage residual CD waste and land clearing waste in a responsible manner, the PRRD proposes to:

- i. Discourage the Ministry of Environment from permitting disposal facilities for the open burning of clean wood waste (including tree trunks and branches) so that this material can be made available as fuel for the local mill, or as amendment for a future composting operation. However, if the Ministry opts to grant a permit or operational certificate to a wood waste burn site, the PRRD expects that permits would only be given to a site located and operated in a manner that will minimize the impact on air quality and health of the citizens of PRRD.



- ii. Inform the Ministry of Forests that open burning of wood waste in the urban interface area of the PRRD is not desired by the community and that alternative disposal options such as chipping (and leaving on-site) or technologies that reduce air quality impacts should be used.
- iii. Consider the establishment of a waste stream management licensing bylaw that would restrict the volume of waste (including CD waste, recyclable materials, compostable materials or residual waste) that can be stored on any property in the PRRD. This would be to ensure that all waste streams managed by the private sector are regularly moved to market and/or a disposal facility. Refer to Section 6.3.1 for additional detail on the proposed approach to increasing PRRD control over private sector solid waste management activities.
- iv. Develop a disaster debris management plan for the management of potentially significant volumes of waste that can be generated in the event of a significant storm, flood, earthquake or fire.

**Table 4-5 Construction, Demolition, and Land Clearing Waste Management: Estimated New Costs**

Action	Estimated Capital Cost	Estimated Operating Cost
Variable tipping fees	\$0	\$0
Disposal bans on recyclable components of CD waste	\$0	\$2,000 for associated consultation and communication costs (one time cost) No on-going costs other than enforcement
Clean wood waste diversion pilot project	\$5,000 for roll-off bin	\$50,000/yr for hauling and processing @ \$100/t Assumes 500 tonnes of clean wood waste would be captured
Solid Waste Management Plans for construction projects	\$0	Costs to be borne by the City: \$10,000 for initial set up (legal costs for bylaw amendments, stakeholder workshops, informational materials)
Promote local CD waste diversion opportunities	\$0	\$1500 (Year 1) to create communication materials, print and distribute \$500 annually to update information, printing and distribution
Consider waste stream management licensing	\$0	No costs at this time
Disaster debris management plan	\$0	One time: \$50,000 to \$100,000 depending on the level of staff effort that can be applied



#### 4.7 Texada Island Metal Depot

The Texada Island Metal Depot is a PPRD operated site. This staffed facility is currently permitted for the collection of scrap car hulks, although it accepts scrap metal, car hulks (with all fluids removed) and metal appliances. Appliances containing ozone-depleting substances (ODS) are currently charged \$25 each to cover the cost to properly remove and recycle the ODS.

Improvements to the operation of this facility are required to ensure that the site receives only the materials it is intended to receive under the current agreement and or under a renewed agreement, and is operated in a manner that is safe for users and the environment.

To effectively plan for the long term future of this facility, PPRD will engage in community consultation to assist with planning for future solid waste services on the island, including the potential for curbside collection as described in Section 4.3.3.

**Table 4-6 Texada Island Solid Waste Service: Estimated Cost**

Action	Estimated Capital Cost	Estimated Operating Cost
Depot Improvements	Costs for improvements to be paid from existing regional solid waste budget	Unknown at this time
Community Consultation	\$0	\$1,000 for consultation costs (meeting space, advertising, printing costs)

#### 4.8 Impact on Residual Waste Management

The recommended actions included in the Zero Waste Strategy aim to reduce the amount of waste that needs to be landfilled (referred to as “residual waste”). Upon full implementation, the strategy could reduce the amount of waste disposed per year from its current rate of 478 kg per person to 307 kg per person. Table 4-6 shows how each component of the Zero Waste Strategy will contribute to this reduction.



Table 4-7 Estimated New Diversion and Estimated Disposal (2018 – 2027)

Estimated New Diversion (tonnes)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Reduction and Reuse</b>										
Plastic Shopping Bag Program		10	20	30	40	40	40	40	40	40
Reuse and Upcycling at the RRC				141	282	282	282	282	282	282
<b>Recycling</b>										
Improve use of City's curbside recycling service	0	130	260	260	260	260	260	260	260	260
Assess curbside collection for rural areas	No additional diversion unless there is a decision to implement curbside									
Disposal bans on recyclable waste (targeting ICI sector)	182	240	328	473	728	728	728	728	728	728
Expanded recycling at RRC	0	0	0	110	220	220	220	220	220	220
<b>Organic Waste Diversion</b>										
City organic waste collection pilot project	63									
City full-scale organics collection at curbside		312	468	624	624	624	624	624	624	624
Disposal ban on organic waste (targeting ICI)		301	602	602	602	602	602	602	602	602
Depot based collection of food waste	70	35	35	40	50	50	50	50	50	50
<b>Construction/Demolition Waste Management</b>										
Disposal ban on recyclable components				66	133	201	201	201	201	201
Clean wood waste diversion				111	222	334	334	334	334	334
Promote diversion opportunities	Supports all CD diversion actions									
Materials Reuse/Resale Facility						42	63	84	84	84
Mandatory SWMP for large projects	Supports all CD diversion actions									
<b>Total estimated new diversion</b>	<b>314</b>	<b>1028</b>	<b>1713</b>	<b>2458</b>	<b>3161</b>	<b>3383</b>	<b>3404</b>	<b>3425</b>	<b>3425</b>	<b>3425</b>
Estimated disposal	9273	8559	7874	7129	6426	6204	6183	6162	6162	6162
<b>Per capita disposal rate</b>	<b>462</b>	<b>426</b>	<b>392</b>	<b>355</b>	<b>320</b>	<b>309</b>	<b>308</b>	<b>307</b>	<b>307</b>	<b>307</b>



## 5 Residual Waste Management

The current residual waste management system in the PRRD consists of waste collection, waste transfer, waste transport and final waste disposal at the Roosevelt Regional Landfill operated by Rabanco in Washington State. The following sections outline the development and characteristics of this unique “export” based system.

### 5.1 System Development

The existing export-based residual waste management system has evolved in accordance with the PRRD’s initial SWMP approved by the Minister of Environment in 1996. From 1971 to 1994 residual waste was burned in a pit burner operated by the City of Powell River (the City) and located at the municipal gravel pit just north of Willingdon Beach Park on Highway 101 (the Marine Avenue site). In 1994 the MOE ordered the City to close the pit burner due to its inability to comply with air emissions standards.

Although the selection of a local landfill disposal site was considered during the development of the 1996 SWMP, the selection process was unsuccessful. Instead the approved plan directed that the PRRD implement a waste export system whereby residual waste would be delivered to a waste transfer site and then transported via truck, barge and rail to a private landfill in Washington State.

From 1994 to 2004 the waste transfer facility was owned and operated by the City at the Marine Avenue site. The waste transfer area was paved but not contained and did not meet provincial guidelines for a transfer station. Consequently, in 2004 the MOE ordered the City to cease operations at the Marine Avenue transfer site to allow for the closure and remediation of the old incinerator and associated ash landfill.

At this point, at the request of the City, the PRRD assumed full responsibility for the waste export system. Although staff recommended that the Board establish a publicly owned and privately operated transfer site, the Board chose to issue a Request for Proposals (RFP) for a privately owned and operated transfer facility as this was the simplest and least cost option available at the time.

In 2004 Augusta Recyclers Inc. (Augusta) won the contract to operate a waste transfer site at their facility located south of the City. Augusta, through its partner company City Transfer, also won the contract to transport waste from the transfer site by truck and barge to the Rabanco intermodal yard in Surrey where containers of garbage are loaded onto railcars and transported to Rabanco’s Roosevelt Regional Landfill. Augusta has been providing these two services under contract to the PRRD since 2004.

### 5.2 The Future of Residual Waste Management

As outlined in a technical memorandum entitled “Residual Waste Management System Issues and Options” prepared as part of the planning process, there are significant contractual and infrastructure issues associated with this privately owned and operated export based approach that make the system



inefficient and a potential risk to public safety and the environment. These issues are recognized by the Ministry of Environment, the PRRD, as well as Augusta Recyclers.

In December 2016, Augusta submitted a proposal to the PRRD Board requesting that the Board consider purchasing the current Augusta waste transfer site to design and build a new publicly-owned transfer facility and then contract the operation to the private sector.

At the same time, during the process to update the *Solid Waste Management Plan*, it was recognized that:

- the contracts with Augusta for a transfer station and waste transportation expire at the end of 2017, allowing for consideration of a new approach
- there is a need for significant upgrades and investment into the Augusta transfer station, if it is to continue to operate as a transfer station
- the PRRD intends to remediate the old incinerator site on Marine Avenue and construct a Resource Recovery Centre on the site – a project which received a \$6 million grant. This facility would provide recycling, EPR, and residual waste drop off services to self-haul customers.

As a result of these factors, the PRRD is proposing to change the current residual waste management model and construct a publicly-owned transfer station that would reflect best management practices in residual waste management.

At the direction of the PRRD Board, the consulting firms MWA Environmental Consultants and Tetra Tech worked with PRRD, City and Tla'amin staff to identify potential sites for a publicly-owned facility and to develop cost estimates to allow for a detailed review of potential scenarios. In January 2017, planning staff from the PRRD and the City of Powell River identified four potential sites for a publicly owned transfer station. A detailed assessment of the sites indicated that only two of the sites had the potential for a new transfer station: the Augusta site and the former incinerator site on Marine Avenue.

Three potential scenarios were developed:

- 1) Develop the RRC, with a commercial transfer station, at the site that is currently owned by Augusta Recyclers
- 2) Develop the RRC, with a commercial transfer station, at the old incinerator site on Marine Avenue
- 3) Develop the RRC without a commercial transfer station at the Marine Avenue site, and construct a commercial transfer station at the site currently owned by Augusta Recyclers.

All of these scenarios included the remediation of the Marine Avenue incinerator site. A financial analysis of the options identified that the least cost (capital and operating) scenario for the PRRD would be to construct the RRC with a new commercial transfer station at the Marine Avenue site. This is due to the fact that the \$6 million Gas Tax grant is non-transferable to other properties and therefore only available to the PRRD at the Marine Avenue location.





### 5.3 Resource Recovery Centre

Due to the large financial advantage of the grant that can be applied to the development of the Marine Avenue site, and the community and environmental benefit of having the Marine Avenue site cleaned and remediated, the Marine Avenue site was selected by the PRRD Board as the preferred location for a future Resource Recovery Centre.

The RRC, which will include a commercial waste transfer station, is expected to use less than half of the land available on this property. The remainder of the remediated land, approximately three (3) hectares (ha), would be made available to the City for use as a community amenity. Previous design discussions with the community envisioned bike trails and botanical gardens next to the RRC. The City has also identified a need for additional parking to serve the nearby parks and trails.

As is currently the case at Augusta's transfer station, the majority of customers are expected to be self-haul. Commercial garbage trucks, including the City's curbside collection vehicles, would also come to this site (an anticipated 15 - 20 trucks per day). Commercial garbage trucks would unload in an enclosed building.

The proposed schedule to remediate and then develop the site as the RRC is:

- 2018 Commencement of detailed design for the closure works and pre-design of RRC
- 2018/19 Construction of closure works and completion of RRC detailed design
- 2019/20 Construction and commissioning of the RRC
- 2021 RRC fully operational

Table 5-1 provides the capital cost estimate to remediate the old incinerator site (site closure) and construct the RRC on a portion of the remediated land.

**Table 5-1 Resource Recovery Centre Capital Cost Estimate**

Resource Recovery Centre	Pre-Design Cost Estimates (\$ million)
Site Closure	\$3.4
Resource Recovery Centre (RRC)	\$5.5
New Transfer Station	\$2.5
Land Purchase	\$0.0
<b>Sub-Total</b>	<b>\$11.3</b>
<i>Less Grant</i>	<i>-\$6.0</i>
<i>Less Reserves</i>	<i>-\$0.9</i>
<b>Capital Cost (to be borrowed)</b>	<b>\$4.4</b>



Although no land purchase will be required, there is no real current value for the land due to the contamination of the site. However, after successful remediation, the land could potentially undergo a fair market valuation to arrive at a post-remediation land value.

Until the RRC is operational, PRRD will continue to contract with Augusta Recyclers for their transfer station services. The PRRD will negotiate a contract extension with Augusta Recyclers to affect operational and safety improvements at the existing transfer site. The revised contract will provide clear definitions of PRRD wastes that will require transfer, transport and disposal as well as waste, such as construction demolition waste that will remain separate from the contract except for a reporting requirement. The new contract will also be coordinated with a revised bylaw that establishes disposal bans on certain recyclable materials (as discussed in Section 4.3.4, as part of encouraging recycling by the ICI sector). As part of their contract, Augusta would be responsible for enforcing those bans on behalf of the PRRD.

While construction of the RRC is underway, the PRRD, in collaboration with the City, will need to assess the operational model for the site to determine if the site will be operated by local government staff or by contractors.

As is currently the case, PRRD will continue to contract out the transportation of waste from the transfer station to the point of disposal, and will continue to export waste out of the PRRD for disposal.

The following table summarizes the estimated annual costs of the residual waste management system once the RRC is operational.

**Table 5-2 Annual Costs of the Proposed Residual Waste Management System**

Description	Annual Costs (2017 \$)
RRC capital cost repayments	\$300,000
RRC operation	\$400,000
Waste transportation and disposal	\$1,200,000
Administration and misc. costs (includes costs for Texada Transfer Station)	\$100,000
<b>Total</b>	<b>\$2,000,000</b>



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## 5.4 Landfills

Currently, PRRD's residential and ICI garbage is buried at the Roosevelt Regional Municipal Solid Waste Landfill in Washington. It is anticipated that during the life of this *Plan* that a private landfill in Cache Creek, owned and operated by Belcorp Industries Ltd, will be opened. Once operational, this site provides an alternative disposal option to PRRD. Future disposal capacity will be identified through a competitive bid process.

In addition to remediating the Marine Avenue site, Powell River is home to two old landfills that have not yet undergone final closure as per the BC Landfill Criteria.

- 1) **The Airport Landfill Site:** A closure plan was prepared for this site by the PRRD with City input. The City, as the holder of the permit for this landfill and as the body that operated the site and collected fees for its operation, is responsible for implementation of the closure plan. The City intends to begin final closure of this landfill site in 2017, as part of extending the runway at the airport.
- 2) **The Squatters Creek Landfill:** A closure plan for this landfill needs to be prepared and will be the joint responsibility of the City and PRRD. Prior to developing the closure plan, it is recommended that an Environmental Conditions Report be prepared to detail the conditions that will need to be considered in the development of the closure plan. Final closure of this site will be the responsibility of the City.

The estimated costs associated with closed landfills are presented in Table 5-3.

**Table 5-3 Closed Landfills: Estimated Cost**

Action	Estimated Capital Cost	Estimated Operating Cost
Airport Landfill Closure	\$1.8 -2.2 million (2014 cost estimate) <sup>7</sup> All costs associated with the closure of this site will be borne by the City	\$57,000 per year for 25 - 30 years (2014 estimate) <sup>7</sup> All costs associated with post-closure monitoring and maintenance will be borne by the City
Squatters Creek Landfill Closure Plan	\$0	Closure plan costs to be shared between PRRD and the City \$12,500 (of \$25,000) for an Environmental Conditions Report \$15,000 (of \$30,000) for Landfill Closure Plan

### 5.5 Summary of the Residual Waste Strategy

Based on the above, the proposed residual waste management strategy includes the following components:

- i. A contract extension with Augusta Recyclers to operate a waste transfer site until the RRC is operational
- ii. A contract to transfer waste for disposal
- iii. A contract for disposal of residual waste at a landfill outside of PRRD
- iv. Remediation of the former incinerator site on Marine Avenue
- v. Development of a Resource Recovery Centre (with transfer station) on the Marine Avenue site
- vi. On-going operation of the Texada Island transfer station
- vii. Final closure of the Airport Landfill site (undertaken by the City of Powell River)
- viii. Closure plan for Squatters Creek (to be jointly funded by the PRRD and the City of Powell River).

<sup>7</sup> Sperleng Hansen Associates Inc. The *Powell River Airport Landfill Closure Plan Final Report*. October 2014.



## 6 Additional Actions

### 6.1 Illegal Dumping

PRRD holds an annual “Trash Bash” in Powell River plus provides funding to Coastal Clean Up events on the islands. These volunteer-based events tackle illegally dumped waste and litter. In addition, PRRD has and promotes the Trash Out app where residents and outdoor groups can report dumping locations. At this time, however, there is no PRRD budget allocated to follow up these reports with cleanup and/or enforcement measures.

Representatives of the PRRD have engaged with local governments on Vancouver Island and the Sunshine Coast through the *Association of Vancouver Island and Coastal Communities* (AVICC) to discuss how to tackle illegal dumping and develop a common set of tools. Recently, the AVICC group created an on-line video advertisement that promotes the Trash Out app.

A similar collaborative approach could be applied to developing a PRRD-wide illegal dumping strategy that would harness the collective resources available in the PRRD. The development of this strategy could be led by the PRRD but it is anticipated that the following stakeholders may also get involved:

- City of Powell River
- Tla’amin Nation
- BC Hydro
- Forestry companies
- Backcountry and ocean user groups (mountain hikers/bikers, fishermen, paddlers, etc.)
- Ministry of Environment Conservation officers
- Ministry of Forests, Lands, and Natural Resource Operations.

This strategy may include the following actions:

- Conduct a survey to determine the most common materials illegally discarded and the most frequent locations, providing a basis for types of materials and “hot spots” on which to build an awareness campaign and clean-up initiatives
- Conduct targeted outreach campaigns if/when specific “problem” groups can be identified
- Establish a mechanism to follow-up on reports by residents and outdoor groups regarding report dumping locations
- Establish local area task forces to deal with problem areas
- Post signs at frequent illegal dumping sites to inform area users about reporting and prosecuting dumpers
- Post cameras at frequent illegal dumping sites with an aim to provide evidence of dumping perpetrators
- Establish enforcement capacity.



There are no estimated capital or operating costs associated with the development of the illegal dumping strategy.

### 6.2 Invasive Plant Species Waste Disposal

PRRD has an Invasive Species Management Strategy and a working group. One of the core aspects of invasive species management is the proper disposal of invasive species to ensure that they cannot propagate further. The PRRD proposes to develop an Invasive Species Disposal Plan. It is anticipated that a significant feature of the disposal plan will be the acquisition of a mobile air curtain burner that can be brought to project sites to burn the removed plants. This will reduce the potential of seed dispersal that can occur when weeds are transported for disposal. PRRD is currently pursuing grant funding for the mobile burner. If unsuccessful at obtaining grant funding, PRRD may pursue partnering on the purchase with other agencies that have a similar need for effective invasive species disposal.

**Table 6-1 Invasive Plant Species Disposal: Estimated Cost**

Action	Estimated Capital Cost	Estimated Operating Cost
Invasive Species Disposal Pan	\$100,000 At least half of this cost is expected to be paid through grants or partnerships with other agencies	\$38,500 per year for operation and replacement reserve fund for the burner

### 6.3 Human-Bear Conflict Management

The PRRD is home to a large population of bears that are integral to the local ecosystem. Unfortunately, bears can cause significant property damage in their attempts to access garbage, including waste containers and storage sheds that are damaged or destroyed when bears want access to stored garbage. Developing and maintaining a solid waste management system that minimizes the potential for human-bear conflict will enhance public safety and prevent the unnecessary destruction of bears.

To date, the following initiatives have been implemented:

- City and PRRD Parks are investing in bear resistant garbage cans
- PRRD is investing in public education about attractant management
- Sunshine Disposal is upgrading dumpster lids to make them bear resistant
- PRRD’s organic waste depot bins are bear resistant
- PRRD has developed a brochure *5 Easy Tips for Composting in Bear Country* and a *How to be a Bear Smart Community* poster.

The City of Powell River has indicated interest in becoming a Bear Smart Community. In order to do so, it will need to:



1. Prepare a bear hazard assessment
2. Prepare a human-bear conflict management plan
3. Revise planning and decision-making documents
4. Implement a continuing education program
5. Develop and maintain a bear proof waste management system
6. Implement and enforce Bear Smart bylaws.

Current waste management bylaws and enforcement procedures will need to be reviewed and updated with consideration of the following:

- containerization and storage requirements for garbage, recycling and organic waste that reduce the potential for wildlife to access these waste streams on collection days and between collection days (this may include the provision of wildlife resistant carts as part of the City's curbside collection program, or to have them available for homes in problem areas of the City);
- set out times for curbside collection (set outs only on the morning of the collection day to reduce the amount of time that containers are accessible to wildlife)
- bear-proof requirements for commercial collection and litter containers that are stored outside.

For a human-bear conflict management plan to be effective, participation will be required from all solid waste management stakeholders, including the City, private waste haulers, local WildSafe BC representatives, and waste generators (homes, businesses and institutions that generate garbage and/or organic waste). The PRRD could also adopt similar approaches where applicable, such as ensuring that any solid waste facilities (RRC, recycling depots) are designed and operated to minimize wildlife attractants, and to educate residents and businesses in the electoral areas regarding how to properly store and dispose of their garbage, recycling and organic waste streams.

### 6.4 Bylaws

To achieve the targets laid out in this *Plan*, the City's and PRRD's solid waste management bylaws will need to be updated to:

- Reflect the intentions of the *Solid Waste Management Plan*
- Clearly define the waste streams regulated by the bylaw
- Provide clarity on the roles and responsibilities of agencies involved in the undertaking of solid waste services
- Have a strong link to service contracts
- Incorporate Bear Smart considerations (as listed in the section above)
- Include enforcement mechanisms.

The PRRD bylaw will be enhanced to include:

- Detailed definitions of acceptable, controlled, prohibited or banned materials
- Site regulations to ensure a safe and orderly environment for the staff and the public at disposal sites



- Fees and charges for a range of materials and services
- Violations and penalties
- Policies and procedures regarding customer accounts and charges.

It is recommended that the City and PRRD bylaws aim for consistency between them, to the greatest extent practical.

#### 6.4.1 Local Control

During the planning process, questions were expressed regarding the need for greater control over private waste management facilities to ensure that they do not become a community nuisance or liability. Two tools for asserting a greater level of control over solid waste management facilities were discussed: waste stream management licensing bylaws and codes of practice bylaws. Recognizing that both of these approaches would require staff capacity to enact and enforce the authority, this *Plan* recommends that further consideration of assuming these bylaw authorities be delayed until after the RRC is operational so that the status of the solid waste management system and the need for additional authority could be better assessed. Consideration of local control bylaws will be incorporated into the *Plan's* 5-Year Effectiveness Review (refer to Section 7.3 for more details on the Review).

Table 6-2 presents the estimated new PRRD costs associated with bylaws.

**Table 6-2 Bylaws: Estimated Cost**

Action	Estimated Capital Cost	Estimated Operating Cost
Bylaw Update	\$0	\$10,000 for legal and consulting fees





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## 7 Plan Monitoring and Measurement

### 7.1 Plan Monitoring Advisory Committee

A Plan Monitoring Advisory Committee (PMAC) will monitor the implementation of the *Plan* and make recommendations to increase its effectiveness. A description of the *Plan* monitoring advisory committee tasks and make up are included in the terms of reference which can be found in Appendix B.

### 7.2 Annual Reporting

On an annual basis, PRRD will compile data on all of the residual disposal activities in the PRRD, including residual waste handled by both the public sector and the private sector, for reporting to the BC Ministry of Environment's on-line disposal calculator.

### 7.3 Five-Year Effectiveness Review

Five years into the implementation of this *Plan*, PRRD will carry out a review of the *Plan's* implementation and effectiveness, as prescribed by the Ministry of Environment. This review should result in a report that is made publically available but does not need to be submitted to the Ministry for approval. This review may include:

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

### 7.4 Waste Composition Study

In advance of the five-year review noted above, a multi-season waste composition study on the residual waste management stream is proposed for year five and again, if appropriate, in advance of the next SWMP update to assess the success of current waste diversion programs and policies and identify opportunities for additional diversion.

The estimated new PRRD costs associated with monitoring and measuring the progress of this *Plan* are presented in Table 7-1.



**Table 7-1 Monitoring and Measurement: Estimated Cost**

Action	Estimated Capital Cost	Estimated Operating Cost
Plan Monitoring Advisory Committee	\$0	\$2,000 per year for meetings, tours, etc.
Annual Disposal Calculator	\$0	\$0
5 Year Effectiveness Review	\$0	\$15,000 for consulting fees
Waste Composition Study	\$0	\$25,000 per study



## 8 Plan Implementation

### 8.1 Plan Implementation Schedule

Table 8-1 provides the planned implementation schedule for the *Solid Waste Management Plan* from 2018 to 2027 in a Gantt chart format. The areas of light blue in the chart indicate the development phase of a service, policy or infrastructure, and the areas of darker blue indicate when an action item is fully operationalized.

### 8.2 Flexibility

This *Plan* represents the current understanding and approach to the solid waste management challenges being faced by the PRRD. The *Plan* is a “living document” that may be amended to reflect new considerations, technologies and issues as they arise.

Due to changing circumstances and priorities that may evolve over time, and with the input of the *Plan Monitoring Advisory Committee* and interested parties, all major actions identified in the *Plan* will be reviewed for appropriateness before implementation. This will generally occur on an annual basis. The *Plan’s* implementation schedule will be flexible enough to reflect the availability of technologies that may arise over time, as well as the potential changes in regional issues and priorities. In addition, it will also take into account the financial priorities of the PRRD, City of Powell River, Tla’amin Nation and other partners, the availability of funding to undertake *Plan* activities, and the availability of contractors and service providers.

An amendment of this *Plan* would be required if there were major changes to the solid waste management system of the following nature:

- a) The opening (or changes to the location or status) of a site or facility that is *not* already identified in this *Plan* and requires an authorization under BC’s Environmental Management Act; or any other facility that could have an adverse impact to human health or the environment
- b) Waste import / export options which would significantly impact the PRRD’s or neighbouring solid waste systems, or not conform to provincial legislation, goals and/or *Zero Waste* targets
- c) Significant changes to the *Plan’s* disposal targets or reductions in programs supporting the first 3Rs.
- d) A change in the boundary of the *Plan*, which would significantly change the amount of solid waste to be managed under the *Plan* or significantly change the population of the *Plan* area
- e) The addition, deletion or revision of policies or strategies related to the conditions outlined in the minister’s approval letter
- f) Major financial changes that warrant seeking elector assent.

If a *Plan* amendment becomes necessary, PRRD would need to undergo a public consultation process and submit an amended plan to the Minister of Environment for approval, along with a detailed consultation report.



**Table 8-1 Proposed Plan Implementation Schedule**

Proposed Implementation Schedule	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>ZERO WASTE STRATEGY</b>										
<b>Promotion and Education</b>										
Maintain current levels of education	█	█	█	█	█	█	█	█	█	█
Effectiveness review				█					█	
<b>Recycling</b>										
Improve participation in City curbside service	█	█								
Improve recycling in multi-family buildings			█	█	█					
Assess curbside collection for rural areas			█							
ICI Recycling	█	█	█	█	█	█	█	█	█	█
Expanded recycling services at RRC				█	█	█	█	█	█	█
<b>Organic Waste Diversion</b>										
Curbside collection of organics (pilot)	█									
Composting facility contract	█									
Disposal ban on ICI organic waste	█	█	█	█	█	█	█	█	█	█
Depot based collection of food waste at RRC				█	█	█	█	█	█	█
<b>Construction/Demolition Waste Management</b>										
Implement variable tipping fees				█	█	█	█	█	█	█
Disposal ban on recyclable CD wastes				█	█	█	█	█	█	█
Clean wood waste diversion pilot project				█						
Facilitate reuse of CD project discards					█					
Consider mandatory waste management plans			█	█	█	█	█	█	█	█
Promote diversion opportunities		█	█	█	█	█	█	█	█	█
Disaster debris management plan							█			
Encourage better land clearing waste management				█						



Solid Waste Management and Resource Recovery Plan

Proposed Implementation Schedule	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Texada Metal Depot</b>										
Facility Improvements										
Community Consultation										
<b>RESIDUAL WASTE STRATEGY</b>										
<b>Resource Recovery Centre</b>										
<b>Airport Landfill Closure</b>										
<b>Squatters Creek Landfill Closure Plan</b>										
<b>ADDITIONAL ACTIONS</b>										
<b>Region-Wide Illegal Dumping Strategy</b>										
<b>Invasive Species Disposal Plan</b>										
<b>Bylaws</b>										
PRRD Solid Waste Management Bylaw										
Assess need for a Local Control Bylaw										
<b>Monitoring and Measurement</b>										
Plan Monitoring Advisory Committee										
5-Year Effectiveness Review										
Waste Composition Study										

Planning/Design Phase	Implementation Phase
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### 8.3 Inter-regional District Cooperation

PRRD recognizes the value of collaborating with other regional districts to improve cost-efficiencies of providing services and equipment, expand the breadth of program delivery, and reduce the time required to design programs through sharing ideas and experiences. To this end, PRRD are members of the following organizations:

- Coast Waste Management Association
- Recycling Council of BC
- Association of Vancouver Island and Coastal Communities Solid Waste Management Committee
- BC Product Stewardship Association.

During the implementation of this *Plan*, PRRD will continue to participate in the above organizations, work closely with the City of Powell River and Tla'amin Nation, and seek to collaborate with other regional districts whenever possible to achieve the *Plan's* goals and targets.

### 8.4 Plan Alignment

The following key PRRD initiatives are supported by the *Plan*:

- Strategic Plan
- Asset Management Policy
- Greenhouse Gas (GHG) Reduction Strategy.

PRRD recognizes the strong linkage between this *Plan* and the above initiatives. The Asset Management Policy will ensure the robustness of the Solid Waste Management System envisioned by this *Plan* and that the implementation of this plan will contribute to the success of the *GHG Reduction Strategy*. Overarching these initiatives is the PRRD's Strategic Plan that identifies asset management, climate change mitigation, and adaptation as priorities.



## 9 Financial Implications

As discussed in Section 1.4, the key drivers for developing this plan were:

- Determining how best to continue to move towards *Zero Waste*;
- Determining how best to manage residual solid waste (the waste requiring disposal), and what should the role of PRRD be; and,
- Determining how to pay for historic and future solid waste management services and infrastructure.

The strategies, actions and costs associated with meeting the first two goals have been discussed in previous sections and represent significant changes and improvements to the MSW management system in the PRRD. This section of the *Plan* presents a summation of the estimated costs (in 2017 dollars) to the PRRD of the proposed solid waste management system and addresses how the implementation of the *Plan* will be financed. These estimates do not include the costs associated with actions that will be undertaken solely by the City of Powell River, such as improvements to the curbside collection service or the closure of former landfills within the City.

It should be noted that the estimated expenditures associated with implementing this *Plan* are reflective of a planning level document and are based on best available information. The costs are not based on detailed design or solicited costs for anticipated services. The actual expenditures required to implement this plan will be based on the cost of goods and services at the time that they are required and can be expected to vary somewhat from the estimates provided in this document.

Table 9 presents the estimated revenues and expenditures associated with implementing the *Solid Waste Management Plan*. As shown, the operational expenses and debt payments (associated primarily with the new Resource Recovery Centre) represents a significant increase in expenditures between 2017 and 2026. As a result, there is a corresponding increase in revenue, which is largely from tipping fees.

**Table 9-1 Estimated Revenues and Expenditures**

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>REVENUE</b>	<b>\$2,131,885</b>	<b>\$2,128,685</b>	<b>\$2,281,350</b>	<b>\$2,449,187</b>	<b>\$2,601,150</b>	<b>\$2,767,752</b>	<b>\$2,807,086</b>	<b>\$2,847,207</b>	<b>\$2,888,130</b>	<b>\$2,929,871</b>
Tax Requisition	458,592	681,355	456,949	586,636	681,183	817,293	830,613	845,474	859,383	874,845
Tipping Fees	1,033,380	1,290,208	1,667,909	1,712,100	1,773,786	1,804,278	1,830,292	1,855,551	1,882,566	1,908,845
Other revenues	\$ 639,913	\$ 157,122	\$ 156,492	\$ 150,451	\$ 146,181	\$ 146,181	\$ 146,181	\$ 146,181	\$ 146,181	\$ 146,181
<b>EXPENDITURES</b>	<b>\$2,131,885</b>	<b>\$2,128,685</b>	<b>\$2,281,350</b>	<b>\$2,449,187</b>	<b>\$2,601,150</b>	<b>\$2,767,752</b>	<b>\$2,807,086</b>	<b>\$2,847,207</b>	<b>\$2,888,130</b>	<b>\$2,929,871</b>
Zero waste	\$ 712,152	\$ 780,350	\$ 701,389	\$ 712,295	\$ 526,144	\$ 563,603	\$ 569,312	\$ 575,134	\$ 581,073	\$ 587,131
Residual waste	\$1,405,983	\$1,336,835	\$1,518,461	\$1,620,392	\$1,595,006	\$1,674,149	\$1,698,774	\$1,723,892	\$1,749,513	\$1,775,646
Other expenditures	\$ 13,750	\$ 11,500	\$ 61,500	\$ 16,500	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000



To recover the increased costs associated with system improvements, the *Plan* recommends a strategy whereby taxation pays for services that universally benefit all residents and businesses in the PRRD, and user fees are charged for disposal of residual waste and non-EPR recycling (e.g. wood, drywall and mattresses). Under this financial strategy, the following are examples of items that would be paid through taxation:

- *Zero Waste* related promotion and education
- Programming associated with illegal dumping and shore line clean ups
- Administration
- Debt payments associated with the remediation of the incinerator site and the construction of the RRC.

For property owners, PRRD taxes for solid waste management are expected to increase each year by an average of \$1 per year per \$100,000 of assessed value (an increase to the solid waste portion of the tax billing of 10% per year) over the 10-year time frame of this *Plan*. Tipping fees for garbage are expected to increase 2% annually from \$220/tonne to \$260/tonne over the same time frame.

The PRRD is pursuing grant funding to construct the new commercial transfer station. If approved, the cost of borrowing will be reduced, which will in turn result in a corresponding decrease in taxes.

This taxation/tipping fee cost recovery model is believed to be the most financially sustainable approach to financing the solid waste management system. If a greater proportion of cost recovery was to be paid by tipping fees, tipping fees would need to be raised significantly and there would be a greater financial risk to the PRRD, in addition increasing the risk of illegal dumping and backyard burning of refuse. If a greater proportion of cost recovery was funded through property taxes, taxation for solid waste would increase dramatically and there would be a loss in the financial incentive for residents and businesses to pursue *Zero Waste* options (such as reduce, reuse, recycle and compost) that comes from a user-pay system.

As discussed in Section 5, this *Plan* proposes that the PRRD change from a private to a public owned residual waste management system. However, over the next two years, while construction of the RRC is underway, the PRRD, in collaboration with the City, will need to assess the operational model for the site to determine if the site will be operated by local government staff or by contractors. Consequently, while the cost estimates for operating the RRC has been developed based on typical operating costs at comparable local government owned and operated facilities, these cost estimates may change depending on the outcome of the Board's deliberations on this matter. Accordingly at this time, the financial implications of the proposed plan are presented at a high level given the uncertainties regarding the operating model.





## 10 Dispute Resolution

Table 10-1 outlines a dispute resolution procedure for dealing with disputes arising during implementation of the *Plan* involving an administrative decision made by the PRRD as part of interpreting a statement or provision in the *Plan*.

This step-by-step procedure aims to have the parties resolve the dispute in an amicable manner, by utilizing each progressive step until the dispute is resolved, ideally without outside intervention. The Ministry of Environment will not become involved in resolving or making a decision in a dispute.

This dispute resolution procedure may apply to the following types of conflicts:

- Administrative decisions made by PRRD staff
- Interpretation of a statement, bylaw, policy or provision in the *Plan*
- The manner in which the *Plan* is implemented.



**Table 10-1 Collaborative Decision Making and Dispute Resolution Procedure**

Step	Action
Step 1: Negotiation	<ul style="list-style-type: none"> <li>♦ Parties involved in the dispute make all efforts to resolve the dispute on their own.</li> <li>♦ Parties may make use of a facilitator.</li> </ul>
Step 2: Plan Monitoring Advisory Committee	<ul style="list-style-type: none"> <li>♦ Parties involved in the dispute will have opportunity to speak to the Committee.</li> <li>♦ Committee will review, consider and provide recommendations to the Board.</li> </ul>
Step 3: Board	<ul style="list-style-type: none"> <li>♦ Parties involved in the dispute will have opportunity to speak to the Board.</li> <li>♦ Board will receive recommendations from the Committee and settle the dispute or recommend mediation.</li> </ul>
Step 4: Mediation	<ul style="list-style-type: none"> <li>♦ Parties involved in the dispute agree on a mediator. If the parties cannot agree on a mediator, the matter shall be referred to the BC Mediation Roster Society or equivalent roster organization for selection of a mediator.</li> <li>♦ All efforts will be made to reach an agreement through mediation.</li> <li>♦ Costs for mediation are shared by the parties in dispute.</li> </ul>
Step 5: Independent Arbitrator	<ul style="list-style-type: none"> <li>♦ If the dispute cannot be resolved by a mediator, the matter will be referred to arbitration and the dispute will be arbitrated in accordance with the <i>Local Government Act</i> or <i>BC Commercial Arbitration Act</i>.</li> <li>♦ The arbitrator shall make a final, binding decision.</li> <li>♦ Costs for arbitration shall be apportioned at the discretion of the arbitrator.</li> </ul>



## Appendices

Appendix A: Existing Solid Waste Management System Report

Appendix B: Plan Monitoring Advisory Committee Terms of Reference



**Appendix A**  
**Existing Solid Waste Management System Report**



## Appendix B Terms of Reference for the Plan Monitoring Advisory Committee

### Purpose and Scope

The purpose of the *Plan Monitoring Advisory Committee* is to advise the PRRD Board and staff on the implementation of the *Solid Waste Management Plan* (Plan). Tasks include:

- ♦ Reviewing information related to implementation of the plan, including waste quantities, populations, and diversion rates for each plan component
- ♦ Advising on each major plan review which will occur roughly every five years
- ♦ Providing recommendations regarding disputes arising during implementation of the plan that pertain to:
  - ♦ interpretation of a statement or provision in the plan, or
  - ♦ any other matter not related to a proposed change to the actual wording of the plan or an operational certificate
- ♦ Ensuring adequate public consultation in matters affecting the public, such as landfill siting and transfer station siting
- ♦ Reviewing new facility applications and making recommendations to the Board.

### Authority

The committee makes recommendations to the PRRD Board via the designated PRRD staff. The Board is the final authority on decisions.

### Membership

The committee shall consist of no more than 10 members appointed by the PRRD Board. Membership shall include representation of the various interests as follows:

- ♦ One member of the PRRD Board representing the City of Powell River (non-voting)
- ♦ One member of the PRRD Board representing an electoral area (non-voting)
- ♦ PRRD Manager of Operations (or equivalent senior staff person in charge of solid waste operations)
- ♦ Staff representative of the City of Powell River
- ♦ Representative from Tla'amin Nation (staff and/or Council)
- ♦ One private sector representative with experience in the recycling business
- ♦ One person with experience in public education relating to solid waste management
- ♦ One private sector representative with experience in the collection and management of solid waste
- ♦ One person with experience in the recovery of resources from solid waste
- ♦ One member of a local environmental group with interests in solid waste.



Memberships are for two-year periods.

### Meeting Arrangements

- ♦ The Chair will be elected annually from amongst the voting membership.
- ♦ The committee will meet annually, or at the call of the chair. Meetings will take place at the PRRD Boardroom unless otherwise specified. Members are expected to attend in person unless arrangements are made to participate by phone or online.
- ♦ Quorum shall be the majority of voting members (i.e. 50% plus one).
- ♦ Staff is responsible for taking minutes. Draft minutes are approved by the committee at its next meeting, and then forwarded to the Board and Councils for information.
- ♦ Staff will prepare agendas in consultation with the Chair. Agendas will be posted on the PRRD website.
- ♦ All committee members are equal and have equal opportunity to contribute at meetings, and must respect the opinions of others.
- ♦ Members are encouraged to work collaboratively and to be committed to reaching consensus where possible, taking into account the best interests of the community. Any members unable to agree with the decision may have their objections noted in the minutes.
- ♦ Members who miss three consecutive Committee meetings may have their membership revoked at the Board's discretion and a replacement representative will be sought.
- ♦ In any proceeding, members must declare any real or perceived conflict of interest. The member involved should excuse themselves from proceedings that relate to the conflict unless explicitly requested to speak, on a majority vote to do so. Any subsequent information provided by the member will clearly be identified in the minutes as coming from a source perceived to be in a conflict of interest.
- ♦ Regular communications between meetings is by email or other acceptable form of electronic communication.
- ♦ Members of the public may observe meetings but will not have voting rights or speaking rights unless invited to speak by the Chair.

### Reporting

The committee reports to the PRRD Board. Meeting minutes are provided to the Board and the Solid Waste Management Committee Board representative is expected to provide regular updates to the Board.



### Resources and Budget

PRRD provides the meeting space and any refreshments, and staff to take minutes. Funds for any projects are from the Solid Waste Management Plan budget and subject to normal budgetary review and approvals.

Participation in the committee is voluntary and there is no remuneration for members' time. Travel assistance, if required, can be provided for members on request, following PRRD travel guidelines.

### Deliverables

The Committee shall provide:

- ♦ An annual report to the Board on the implementation of the plan
- ♦ Recommendations to the Board on changes required to the plan implementation.

### Review

The terms of reference will be reviewed every year and updated as required. Changes to the terms of reference must be approved by the Board.