

# Draft for Discussion

## Phase 1 Report: Existing Solid Waste Management System



Prepared for  
**Powell River Regional District**

Submitted by  
**Gartner Lee Limited**

**October 2008**

**Draft for Discussion**

# **Phase 1 Report: Existing Solid Waste Management System**

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**Powell River Regional District**

**October 2008**

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Distribution:  
**1 PDF Powell River Regional District**



Gartner Lee Limited



October 7, 2008

Frances Ladret  
Administrator  
Powell River Regional District  
5776 Marine Avenue  
Powell River, BC V8A 2M4

draft for discussion

Dear Frances:

**Re: GLL 70-950 – Phase 1 Report: Existing Solid Waste Management System**

We are pleased to submit our Phase 1 report that describes the existing solid waste management system in the PRRD and provides a review of the implementation status of the 1996 Solid Waste Management Plan.

We appreciate this opportunity to be of service.

Yours very truly,  
GARTNER LEE LIMITED

Sarah Wilmot  
Senior Waste Planner

SW:gc

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Gartner Lee Limited

October 7, 2008

Frances Ladret  
Administrator  
Powell River Regional District  
5776 Marine Avenue  
Powell River, BC V8A 2M4

Dear Frances:

**Re: GLL 70-950 – Issuance of Draft Reports**

A DRAFT is a rough copy of a report. The intent in issuing it is to allow other knowledgeable people associated with the project an opportunity to review the style and content prior to final issuance.

Since the FINAL report may differ from the draft, we think it is only prudent to collect all of the DRAFT reports prior to issuance of the FINAL report.

We would appreciate it if you would see that all copies of the DRAFT are returned to us and then we will issue our FINAL report.

We thank you in advance for your cooperation.

Yours very truly,  
GARTNER LEE LIMITED

E. Grant Anderson, P.Eng.  
President

EGA:  
Attach.

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draft for discussion

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## 1. Background

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The Powell River Regional District (PRRD) is undertaking a review of the 1996 Regional Solid Waste Management Plan. This report outlines the implementation status of the original Plan, the current status of solid waste operations and issues for waste management in the region.

The process to review the plan will be conducted in three phases. The first phase is an assessment of the current system and a report on the implementation status of the 1996 Plan. The second phase is the review of options to address the region's future solid waste management needs and the selection of preferred options. The final phase will be a community consultation process to obtain input into the selected options. Throughout the process, an advisory committee will be involved in reviewing consultant's reports and providing feedback to the PRRD on the Plan's development.

This document is the Phase 1 report and will be used as the baseline for Phase 2 of the planning process.

In addition to the above standard process for developing and reviewing a solid waste management plan, the PRRD commissioned a study approximately one year prior to commencing the plan review. The purpose of the study was to assess the existing solid waste management system, and to compare programs in the PRRD to those in other regional districts in British Columbia. This study recommended waste management programs and policies that should be investigated to determine their applicability to the PRRD, as part of a plan review process. The results of this study are appended to this report, and will provide a starting point for Phase 2.

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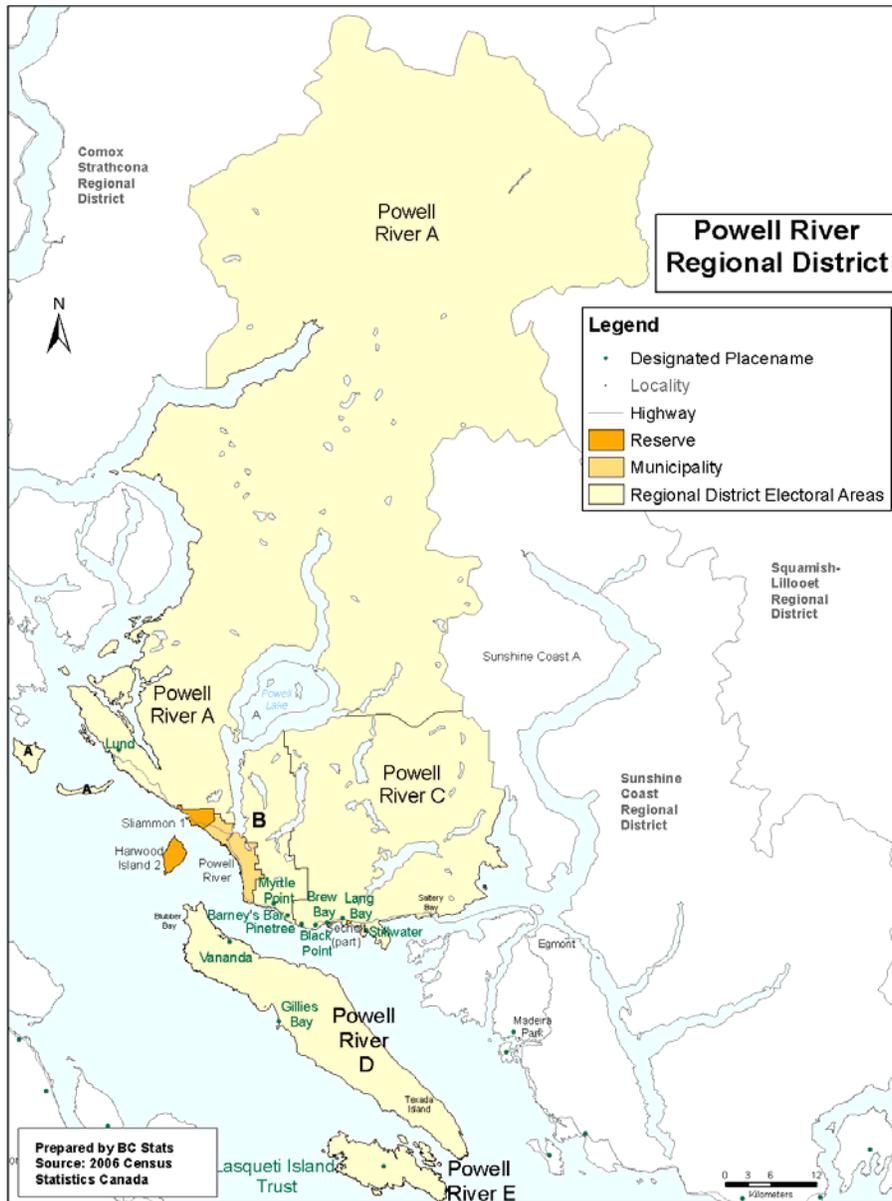
## 2. Plan Area

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The Solid Waste Management Plan applies to the entire PRRD, which covers 5,092 km<sup>2</sup> (2006 boundaries). The PRRD 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 is also one Indian reserve (Sliammon First Nation) and a portion of the Sechelt Indian Governmental District. Please refer to Figure 2-1.

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 Comox-Strathcona Regional District to the northwest, and the Pacific Ocean to the west. The PRRD is home to Desolation Sound Marine Provincial Park, a popular yachting destination.

Figure 2-1. PRRD Map



The PRRD experiences a moderate coastal climate, with daily average temperatures of 4°C in January and 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>1</sup>

<sup>1</sup> Climate data from <http://www.climate.weatheroffice.ec.gc.ca>.

## 2.1 Population

As shown in Table 2-1, the 2006 census count for the region in 2006 was 19,599, including Municipalities, Electoral Areas and Indian Reserves. The population has fallen 0.8% since 2001; BC Statistics predicts a further decrease in population over the next twenty-five years to 18,682 in 2032 (a 4.7% decrease).

**Table 2-1. PRRD Population**

Area	2006 Population <sup>2</sup>	% of PRRD Total
City of Powell River	12,957	66.1%
Electoral Area A, north of City	914	4.7%
Sliammon First Nation (Part of Area A)	682	3.5%
Electoral Area B	1,489	7.6%
Electoral Area C	2,074	10.6%
Small area of Sechelt Indian Government	17	0.1%
Electoral Area D – Texada Island	1,107	5.6%
Electoral Area E – Lasqueti Island	359	1.8%
<b>Total</b>	<b>19,599</b>	<b>100%</b>

The estimated population in 2007 was 20,820, a 6% increase over 2006.

## 2.2 Economic Data

In 2006, there were 8,774 households in the PRRD; 86.6% of these dwellings were single-detached, semi-detached, row houses or duplexes, with the remainder being apartments and movable dwellings.<sup>3</sup> The average number of people per household was 2.2, which is below the BC average of 2.5.

According to BC Statistics' 2006 census data, the main industries (by labor force) for the region are logging and forest products, manufacturing, retail trade, healthy care and social assistance, and paper manufacturing.<sup>4</sup> Powell River is home to a large pulp mill.

<sup>2</sup> [http://www.bcstats.gov.bc.ca/data/cen06/mun\\_rd.asp](http://www.bcstats.gov.bc.ca/data/cen06/mun_rd.asp)

<sup>3</sup> Source: 2006 Census Profile of Powell River Regional District, BC Stats

<sup>4</sup> Source: 2006 Community Facts for Powell River Regional District, BC Stats

### 3. Waste Stream Characterization

This section provides a general description of the solid waste generated in the PRRD, including the composition of the waste stream and how much waste is disposed in landfill and recycled. This information, along with the system description in Section 4, provides the baseline for the solid waste management planning process.

#### 3.1 Composition of Waste Disposed

Two distinct waste streams are handled in the PRRD: municipal solid waste (MSW) generated by residents, businesses and institutions, and inert waste, generated through demolition, construction, and land clearing activities. The MSW is transported to the Wastech landfill in Cache Creek, under a contractual agreement with Metro Vancouver (formerly called the Greater Vancouver Regional District). Inert waste, such as construction waste, is transported to the Ecowaste landfill in Richmond. As these two waste streams are handled separately, the composition of each is estimated independently. These estimates are then applied to the total quantities of MSW and inert waste disposed to generate an estimate of the overall waste composition.

##### 3.1.1 MSW Composition

Gartner Lee conducted a waste composition study from September 29-October 1, 2008. The study looked at 2,454 kg of MSW, sorted into 37 categories. A total of 21 samples were examined; 9 samples from the commercial sector, 8 samples from the City's residential collection program, and 3 samples from residential drop off. The waste composition results in are shown in Table 3-1.

**Table 3-1. MSW Composition**

Category	% of Waste stream
Paper	9.0%
Glass	1.6%
Metal	3.6%
Plastic	8.1%
Food Waste	32.3%
Yard Waste	1.6%
Compostable Paper Products	6.6%
Wood Waste	2.3%
Gypsum	1.0%
Aseptic Containers	0.5%

Textiles	<b>3.5%</b>
Inert Waste	<b>3.0%</b>
HHW	<b>0.6%</b>
E-Waste	<b>2.6%</b>
Carpet	<b>1.4%</b>
Composite Products	<b>12.9%</b>
Pet Waste	<b>5.4%</b>
Fines	<b>0.9%</b>
Other	<b>3.1%</b>
<b>Totals</b>	<b>100.0%</b>

### 3.1.2 Inert Waste Composition

The composition of the inert waste was estimated based on the results of construction and demolition waste composition studies conducted for the Greater Vancouver Regional District (2004), the Regional District of Central Okanagan (2002) and the Whistler landfill (2003). The various waste composition studies did not use the same waste categories, so an effort has been made to include a representative set of categories.

The quantity of wood in the inert waste loads sent from the PRRD to Ecowaste is likely to be lower than in the other regions, since clean wood is separated, ground and given to the local mill. This treatment option is less expensive than shipping the material and paying a tipping fee for disposal. Treated wood or wood with nails is not suitable for hog fuel, and is shipped to Ecowaste for disposal.

The estimated inert waste composition is shown in Table 3-2, along with the data from other jurisdictions that was used as a basis for the estimate.

**Table 3-2. Estimated PRRD Inert Waste Composition**

	<b>GVRD (2004)</b>	<b>RDCO (2002)</b>	<b>Whistler (2003)</b>	<b>PRRD Estimate</b>
Wood	40.0%	27%	42%	25%
Roofing	18.6%			12%
Plastic	11.4%	6%	5%	10%
Paper	1.5%	7%	18%	10%
Fines	8.5%		5%	10%
Metals	1.5%	6%	13%	9%
Concrete, Brick and asphalt	7.9%		3%	8%
Stumps	5.9%			4%
Gypsum	0.2%	6%		4%
Carpet			12%	3%
Bulky Items	0.1%			2%
Flooring	1.3%			1%
Glass	0.1%	1%	0.5%	1%
Household hazardous waste			<1%	1%
Textiles	1.7%		<1%	1%
Other	1.3%	47%		

### 3.2 Disposal and Diversion Estimates

Table 3-3 outlines the main activities that contribute to the PRRD's disposal and diversion rates. The contributing population was assumed to be 19,599 based on the 2006 Census. A description of the disposal facilities and the recycling activities in the PRRD is provided in Section 4.

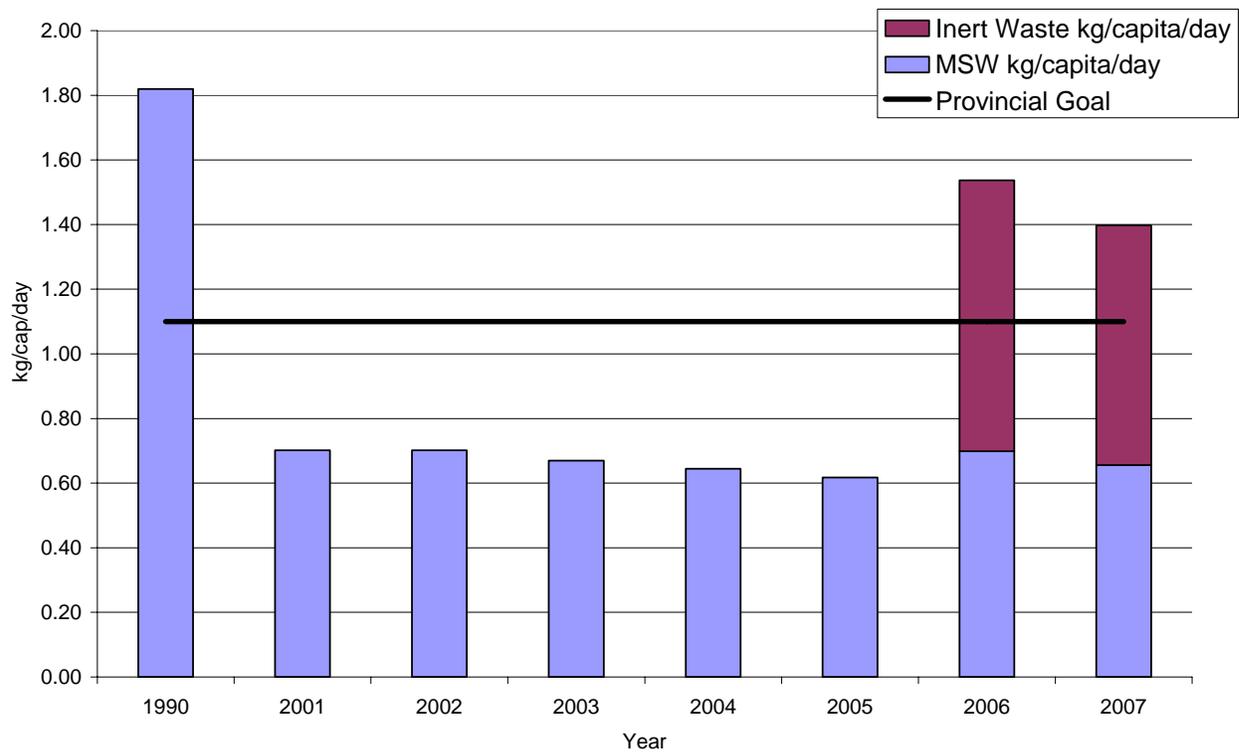
In 2007, the PRRD disposed of 10,623 tonnes (4,982 tonnes of MSW and 5,641 tonnes of CD waste) and recycled an estimated 7,317 tonnes of material, resulting in a diversion rate of 41%. The average diversion rate for BC Regional Districts is 32%. Details on the materials diverted are provided in Table 3-3.

**Table 3-3. Diversion and Disposal Activities in 2007**

	<b>Tonnes</b>
MSW exported to Cache Creek	4,982
Inert waste exported to Ecowaste	5,642
<b>Total Disposal</b>	<b>10,624</b>
<b>Diversion</b>	
<b>Government funded diversion</b>	
Multi-material recycling depots	453
Curbside recycling (City of Powell River)	124
Self-haul household recycling	58
Backyard composting (@ 250 kg per unit/year, assume 200 active units)	50
<b>Private Sector Recycling</b>	
Gypsum (to New West Gypsum)	394
Concrete/Asphalt (to Three Leaf)	397
Scrap metal recycling (marketed directly)	3,236
Yard waste & clean wood waste (chipped to hog fuel used at mill)	1,900
<b>Extended Producer Responsibility (Product Stewardship)</b>	
Beverage Containers	325
Oil (2,111 litres)	2
Tires (based on average of 10kg per tire)	13
Lead acid batteries (to Metalex Products Ltd)	30
Product Care (paint, flammables, gasoline and pesticides)	Not available
<b>Total Diversion in 2007</b>	<b>7,317</b>
<b>Total Waste Generation (Disposal + Diversion)</b>	<b>17,941</b>
<b>Recycling Rate (Diversion/Generation)</b>	<b>41%</b>

The 2007 annual per capita disposal rate in the PRRD was 0.51 tonnes or 1.40 kg/capita per day, including both MSW and inert waste.

Figure 3-1 shows the per capita disposal rate in the PRRD for the 1990 baseline and the period of 2001 to 2007, as well as the provincial goal of 1.1 kg/capita/day. The data for 2001-2005 is taken from the MSW Tracking Reports produced by the BC Ministry of Environment. The data for 1990-2005 did not include disposal of inert waste. The 2006 and 2007 data in the graph below includes both MSW (scale data) and inert waste (estimate). In comparison to the 1990 baseline, the PRRD has reduced per capita waste disposal by 23%.

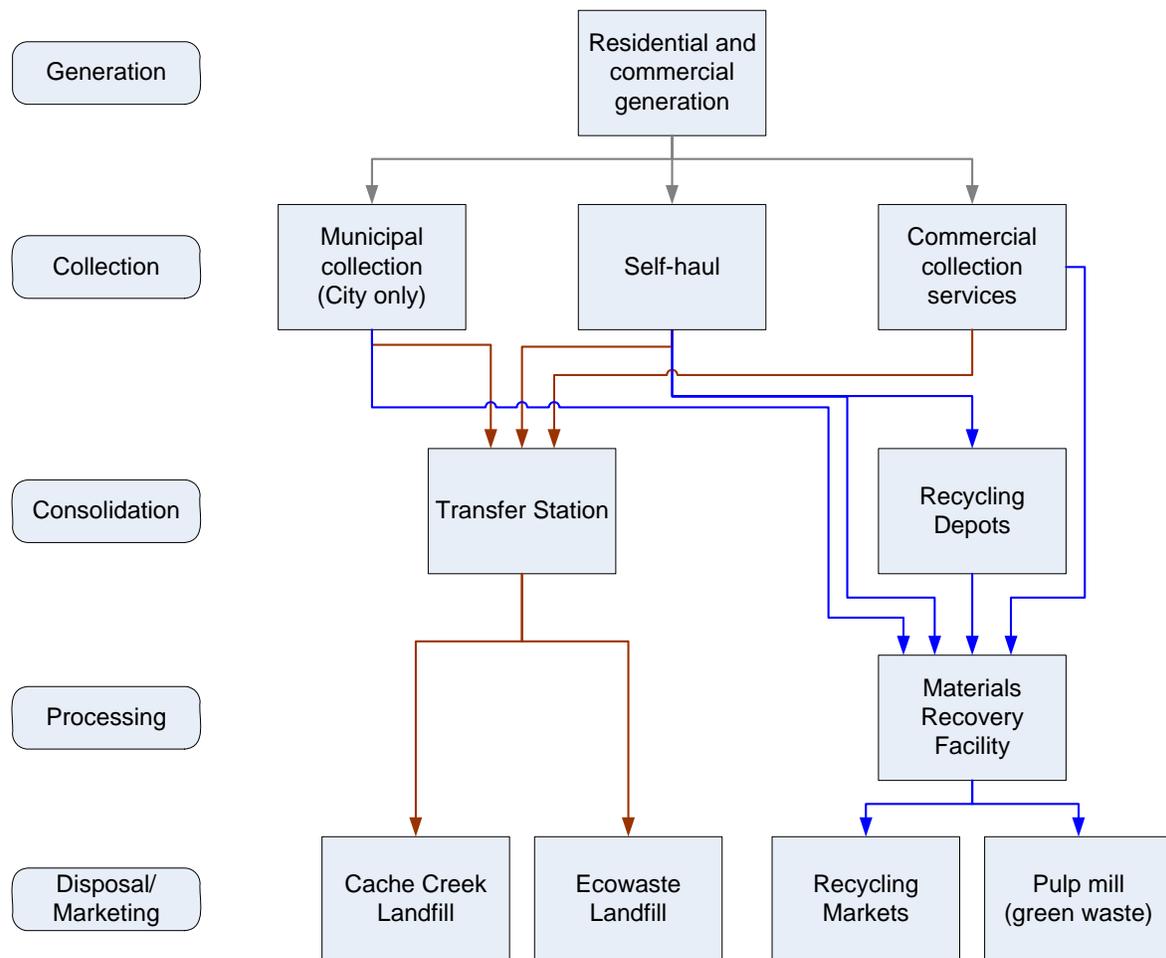


**Figure 3-1. Waste Disposed Per Capita Per day**

### 3.3 Waste Flows

Figure 3-2 shows the flow of solid waste from the point of generation through the various waste management activities in the PRRD.

Figure 3-2. Waste Flows



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## **4. Existing Solid Waste Management System**

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This section describes the major infrastructure, services, programs and policies in place in the PRRD that contribute to the management of solid waste.

### **4.1 Education and Promotion**

Education and promotion is the responsibility of the PRRD's contractor, Augusta Recyclers. Under the terms of the contract, Augusta is required to post information on waste reduction and recycling in the local paper on a monthly basis.

Some limited information on the City's curbside recycling and garbage collection programs is provided on the City's website. There no waste or recycling information on the PRRD's website; Augusta and Sunshine Disposal do not have websites.

Many of the education initiatives outlined in the 1996 Waste Management Plan were not implemented or are not currently offered. Section 5 of this report provides a list of programs in the 1996 Waste Management Plan and their current implementation status.

### **4.2 Reduction and Reuse Programs**

There are minimal waste reduction programs in place in the PRRD. The primary waste reduction driver in place is the high tipping fee at the transfer station, and the user-fee model for waste collection in the City of Powell River and offered by the private sector for commercial generators and for residents in electoral areas.

Backyard composting is another means of waste reduction that is used by many communities to reduce the quantity of organic waste disposed. The PRRD has promoted backyard composting by offering subsidized compost bins and by providing financial support for a compost demonstration garden. Many years ago, a large number of bins were distributed through this program, although the program is not currently active. There are concerns about backyard composting acting as an attractant to bears.

### **4.3 Recycling**

#### **4.3.1 Government-Funded Recycling**

The PRRD funds a recycling program for all residents. In the form of recycling depots. There are 6 depots distributed throughout the PRRD. There are two bins located in electoral areas on the

mainland (one each north and south of the City), and two bins on Texada Island (at Gillies Bay and Van Anda). There are also two depots are in the City at supermarket locations, which are used by both rural and city residents. The general public may also bring recyclables to the Augusta transfer station for no cost.

The depots consist of roll-off bins with compartments for mixed paper (newspaper, magazines, boxboard), cans and plastic. Cardboard is collected in separate bins located with the multi-material bins. The number of bins varies between depot sites. The depots are serviced by the PRRD's contractor, Sunshine Disposal, who hauls the bins to Augusta Recyclers. In 2007, the depots collected 492 tonnes of recyclable material.

The quantities received at each depot are listed in Table 4-1.

**Table 4-1. Multi-Material Recycling**

Depot Location	Tonnes collected (2007)
North of City (Wildwood)	36
South of City (Black Point)	49
City 1 (Overwaitea)	174
City 2 (Safeway)	180
Texada - Van Anda	19
Texada - Gilles Bay	34
<b>Total</b>	<b>492</b>

The figure above does not take into consideration contamination in the recycling. Overall, Augusta reports a residual rate of about 8% for household recyclables. If this is applied equally to all sources of household recyclables, then the net quantity of recyclables collected through the depot system is 453 tonnes.

The PRRD also pays the processing costs for recyclables collected by the City of Powell River's curbside collection program. The City of Powell River's curbside recyclables program collects five streams: mixed paper, cans, newsprint, glass, and plastics (1, 2, 4, 5, 7 and 6, except styrofoam). Residents are asked to place each stream in a separate plastic bag (such as a grocery bag), and to tie the bag closed. When the materials are received at the Augusta facility, the sorters tear open the bags and place the materials in the appropriate containers. The plastic bags are also recycled. In 2007, the City collected 134 tonnes of recyclables through the curbside collection program. This figure does not take into consideration contamination in the recycling. Overall, Augusta reports a residual rate of about 8% for household recyclables. If this is applied equally to all sources of household recyclables, then the net quantity of recyclables collected through the curbside system is 124 tonnes.

Residents may also bring recyclables directly to Augusta, for no charge. The PRRD also pays the processing fee for materials dropped off by residents. In 2007, residents dropped off approximately

63 tonnes of materials, mostly mixed glass. Applying the 8% contamination rate to this figure leaves 58 tonnes of recyclables received.

#### 4.3.2 Private Sector Recycling

In addition to recycling household recyclables under contract to the PRRD, Augusta also recycles other materials. Scrap metal, including appliances, is received for no charge (a fee is levied if the compressor is still attached to fridges and freezers, to cover the cost of coolant removal by a contractor). Used tires are also received at the site and are stockpiled with the intention of shipping them to tire processors in the future. Augusta Recyclers also operates a Product Care facility offering PaintPlus and Paint Exchange services. In addition, lead-acid batteries, and use motor oil and filters are accepted at Augusta under product stewardship programs.

Sunshine Disposal offers commercial collection of recyclable fibres (cardboard and office paper) Currently there is no multi-material collection for the ICI sector. Sunshine Disposal markets some recyclables directly, while others are taken to Augusta Recyclers. Other companies that service the ICI sector with collection of recyclable fibres bring the material to Sunshine Disposal for consolidation. It is estimated that Sunshine Disposal handles approximately 240 tonnes/year of recyclable fibres.

Some commercial generators of recyclable materials haul their own recyclable materials directly to Augusta. It is estimated that Augusta handles approximately 140 tonnes/year of recyclables from the commercial sector. This figure was calculated by subtracting the quantity of material received through government-funded programs and public drop off (as detailed in Section 4.3.1) from the total quantity marketed by Augusta (in Table 4-2).

The total quantities of materials recycled through Augusta are shown in Table 4-3. This includes material received through the City's program, from the PRRD's recycling depots, self-haul, and ICI sector recyclables. This data is indicative of the total material delivered to market by Augusta, with the exception of glass, which is collected separately, but is not currently recycled or reused.

**Table 4-2. Recycling Marketed by Augusta**

Material	2007 Tonnes Marketed
Newsprint	69
Office Pack	12
White Ledger	1
Mixed Paper	352
Magazines	28
Cardboard	73
Mixed Plastic	140
Milk Jugs	19
Tin	96
<b>Subtotal recycled</b>	<b>790</b>
Glass (not recycled)	154

It is believed that no ICI generators backhaul their own recyclables. Small ICI waste generators can use the recycling depots.

### **4.3.3 Centralized Composting**

There are no centralized composting operations or compost demonstration gardens in the PRRD. Yard and garden waste is accepted as a separate waste stream at the Augusta facility. It is stockpiled on site, and then moved offsite to a contractor, who grinds it and sends it to the pulp mill for use as hog fuel (no revenue is received from the pulp mill). In 2007, approximately 1,900 tonnes of organic waste were delivered to the contractor for grinding.

No other organics are collected or processed separately. It is believed that due to the rural nature of the regional district, many residents participate in backyard composting. However, the prevalence of bears may deter residents from backyard composting food waste.

## **4.4 Residual Waste Management**

### **4.4.1 MSW Collection Services**

#### *4.4.1.1 City of Powell River*

The City of Powell River collects garbage from approximately 23,000 homes within the City limits, using a manual garbage collection system. An annual fee is charged for garbage collection, plus a fee of \$2 per bag (all bags must have stickers on them, which cost \$2 each, and can be purchased from the City and various retail outlets). The bag fee covers the tipping fee paid by the City at the transfer station. There is no bag limit. In 2007, the City collected 124 tonnes of residential waste in their curbside program.

Residents may also choose to bring their waste to the Augusta transfer station, where they will be assessed a fee based on the weight of the garbage (\$170/tonne, pro-rated for smaller loads). Open burning of garbage within the City is prohibited under Bylaw 1931.

A private contractor provides commercial garbage collection in the City. This contractor also services multi-family dwellings that use front-end load bins. Customers are charged for container rental and for the tipping fee, which is passed on directly with no mark-up. ICI generators also have the option to bring their waste directly to the transfer station.

#### *4.4.1.2 Electoral Areas*

Residents of the electoral areas do not receive waste collection service through the PRRD. These electoral area households may self-haul their waste to the transfer station, or they may choose to

contract directly with a waste collection service provider, such as Sunshine Disposal. Disposal at the transfer station is charged at a rate of \$170/tonne and is paid at the time of drop-off (costs are pro-rated by weight for smaller loads). Private sector waste collection service providers charge residents approximately \$1.70 per bag to cover the tipping fee, plus an annual charge for the service (\$119 on the mainland and \$130 on Texada). The service is not available to Lasqueti residents due to the lack of direct ferry link to the mainland.

#### **4.4.2 Transfer Sites**

##### *4.4.2.1 Augusta*

The transfer station operated by Augusta Recyclers Inc. is a key piece of the solid waste management infrastructure in the PRRD. The site provides facilities for transfer of MSW, C&D waste, and a wide variety of recyclables, including household recyclables, materials covered by EPR programs, and commercial sector materials. The site and its improvement are privately owned.

##### *4.4.2.2 Texada Island*

The PRRD operates a facility on Texada Island known as the “transfer site” or “heavy metal dump”. The site accepts scrap metal such as cars and appliances, as well as a range of smaller metal items that have potential for recycling. No MSW or other waste is accepted at the site. The site is open a few days per week; at other times it is gated and locked. The PRRD hires a contractor to remove the stockpiled material every few years, as necessary.

#### **4.4.3 Landfills**

The PRRD does not have a disposal facility of its own. MSW is disposed of through Metro Vancouver’s disposal system (currently the Cache Creek Landfill). MSW is collected at a transfer station that is owned and operated by Augusta Recyclers. Waste is transferred into B-train trailers, which then move by barge and highway to the Cache Creek Landfill in the Thompson-Nicola Regional District.

Inert waste is collected at the same transfer station, but is hauled by barge to the Ecowaste inert waste landfill in Richmond, BC. More details on inert waste handling are provided in Section 4.5.

##### *4.4.3.1 Wastech Landfill in Cache Creek*

The PRRD currently sends approximately 5,000 tonnes per year of MSW to the Cache Creek landfill, located in the interior of BC, though a contract with Metro Vancouver (formerly known as the GVRD). This landfill is owned by Wastech. The Cache Creek Landfill is expected to stop accepting waste in 2010. Metro Vancouver is currently updating its solid waste management plan and undertaking a search for disposal capacity replacement. The final replacement is likely to be a

combination of landfill and new waste-to-energy capacity, with expected interim use of other private landfills in the US and/or the Vancouver Landfill.

The on-going availability of disposal capacity for the PRRD and other regional districts that make use of Metro Vancouver's disposal facilities is uncertain at this time. The PRRD's contract with Metro Vancouver expires at the end of 2008.

#### 4.4.3.2 Closed Landfills

There are two known closed sites that were used as dumpsites in the past. The locations and status of these sites are:

- *Municipal Airport Site* – This site operated under permit 5067, and was designated to receive inert waste. The site has not been properly closed, although it is believed that disposal at the site ceased in the 1990s.
- *Squatters Creek Landfill* – This is a former ravine dump, which never had a permit. Current developments on top of the site are experiencing issues with methane release from the dump.

#### 4.4.4 Incinerators

There is one known site that was used for an incinerator in the past (including disposal of incinerator ash). The site was used as the waste transfer site, but the waste transfer site has now moved. The site has not been undergone final closure.

### 4.5 Inert Waste

Inert waste is accepted at the Augusta transfer station. The inert waste received consists of wood, roofing and flooring materials, insulation, carpets, underlay, furniture, plywood, pallets and other construction/renovation related materials (generally referred to as construction and demolition, or C&D, waste). This material is barged to the Lower Mainland for disposal. In 2007, an estimated 5,641 tonnes of C&D waste was exported from the PRRD.

Augusta deals with InnerCity Demolition to secure disposal capacity. The majority of the inert waste is disposed of at the Ecowaste Landfill in Richmond, although some waste is disposed of at the Vancouver Landfill, when inert waste is required for road beds and other landfill construction projects. The current closure plan for the Ecowaste Landfill calls for closure in 2015. The quantity of inert waste taken to Ecowaste each year is estimated at 6,000 tonnes/year. Finding replacement capacity for the disposal of inert waste after 2015 may be a challenge.

Creosoted and treated wood are charged a higher tipping fee than general C&D waste; these materials are shipped in separate loads to Ecowaste Landfill.

Augusta accepts soil for a significantly lower tipping fee than general construction/demolition waste because it can be used locally and does not need to be sent to Ecowaste for disposal. Land clearing debris (stumps, trees over one foot in diameter) is also accepted at Augusta, for a slightly lower rate than general C&D waste. The majority of this material is given to a contractor for grinding into hog fuel along with the yard waste.

## 4.6 Illegal Dumping

Illegal dumping of waste is a common affliction of rural areas throughout British Columbia. In the PRRD, illegal dumping is most noticed at the closed landfill site and on dead-end rural roads. It is a fairly significant concern, as clean-up is time consuming and expensive.

The PRRD has a history of waiving the tipping fees for materials brought in by local groups cleaning up illegally dumped waste.

## 4.7 Regulation and Policies

### 4.7.1 Powell River Regional District

*A bylaw for the purpose of establishing waste tipping fees; Bylaw No. 402, 2006* – This bylaw sets the tipping fees charged at Augusta on behalf of the PRRD for municipal solid waste.

### 4.7.2 City of Powell River

*A bylaw to provide for the control, collection and removal of garbage within the City of Powell River Bylaw No. 2144, 2007* – This bylaw defines how waste is collection in the City of Powell River for single family residential, multi-family residential and business/municipal customers. It sets the standard for waste collection containers (garbage bags for single family residential customers, front-end loader bins for multi-family and business customers), the maximum weight, and the location of the containers. The bylaw also defines some “unacceptable wastes”, which include cardboard, yard waste, C&D waste.

*Residential Backyard Burning Bylaw No. 1931, 2001* – Open burning of dry, combustible, segregated garden refuse is allowed during period specified by the Fire Chief, and a permit is required. Garbage is not allowed to be burned.

*Rubbish Bylaw No. 1476* – This bylaw prohibits permitting rubbish or noxious, offensive or unwholesome matter to accumulate around premises and to prohibit the deposit or throwing of rubbish in any open place, including any yard, driveway, square, highway, park or sidewalk (public or private property). The maximum fine on conviction is \$2,000.

## 4.8 External Programs and Policies

The BC Environmental Management Act (EMA) was enacted in 2004 and is administered by the Ministry of Environment. It combined the Waste Management Act and the Environment Management Act to create a single statute governing environmental protection and management in British Columbia. The new act outlines regulatory regimes such as the Recycling Regulation (BC Reg. 449/04). The Recycling Regulation provides a legal framework for establishing new product stewardship programs. Each of the programs listed in this section is regulated by this Act.

### 4.8.1 Beverage Container Stewardship Program Regulation

BC was the first province to establish a mandatory deposit-refund system for soft drink and beer containers through the Litter Act in 1970. In 1997 the Beverage Container Stewardship Program Regulation replaced the outdated *Litter Act* to increase the range of materials regulated. It required all beverage brand-owners of ready-to-drink beverages — with the exception of milk, milk substitutes, liquid-meal replacements and infant formula — to establish a province-wide return collection system for beverage containers, under a deposit-refund system. The regulation established the goal of a minimum 85 percent recovery rate and requires that redeemed containers be either refilled or recycled.

This Beverage Container Stewardship program is now regulated by the Recycling Regulation. The Ministry of Environment is currently reviewing this program.

There are three main stewardship agencies, Encorp Pacific Canada who are responsible for non-alcoholic beverage containers (57.2% of beverage containers sold), Liquor Distribution Branch is responsible for wine, spirits, non-refillable beer, cider and cooler containers (9.6% of beverage containers sold) and Brewer's Distributed Limited is responsible for refillable glass bottles and aluminum cans for domestic beers, ciders and coolers (33.3% of beverage containers sold).

In the PRRD, the Encorp depot collecting these materials is south of Powell River. In addition, most stores that sell liquor, beer and wine take back empty alcoholic beverage containers. Together with the grocers who accept beverage container returns, the depot received an average of 219 containers per person in 2007, slightly below the provincial average of 227. Approximately 85% of the returns were to the depot, rather than a major grocer.<sup>5</sup>

### 4.8.2 BC Lead Acid Battery Collection Program

In 1991, the Ministry of Environment implemented the BC Used Lead-Acid Battery Collection Program, the only initiative of its type in Canada. The battery program provides Transportation Incentive Payments (TIPS) as a form of funding assistance to ensure safe collection and transportation of end-of-life batteries from generators to an approved broker or processing facility.

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<sup>5</sup> <http://www.encorp.ca/cfm/index.cfm?It=100&Id=85>

The objectives of the program are to recover at least 98% of all end-of-life vehicle batteries generated annually in BC, to ensure that end-of-life batteries generated anywhere in BC can be economically transported to a processor. Under the program, virtually 100% of the end-of-life lead-acid batteries generated annually in the province are recovered.

In addition, a \$5 environmental levy applies to purchases of new lead-acid batteries weighing two kilograms or more. The levy does not apply to rebuilt or reconditioned batteries, or new lead-acid batteries purchased solely to power an electric wheelchair or a three wheeled motorized device designed for the transportation of a person with a physical impairment.

In PRRD, lead acid batteries are currently being collected at the transfer station and handled through the stewardship program.

#### **4.8.3 Tire Stewardship BC**

In 1991, a \$3 levy on the sale of new tires in BC was introduced through the Financial Incentives for Recycling Scrap Tires (FIRST) program. The FIRST program was funded by consumers and administered by government, with no involvement of the tire industry, other than retailers, who collected the levy on behalf of the government and voluntarily took back scrap tires from consumers.

On January 1, 2007, BC's Scrap Tire Recycling Program shifted from a government led program to an industry run program under the authority of the BC Recycling Regulation. Tire Stewardship BC collects an "Advance Disposal Fee" on the sale of each tire. Over 90% of the money is paid to the processors and haulers to collect, transport and recycle the scrap tires.

In the PRRD, tires are currently collected at the Augusta site and the Transfer Site on Texada.

#### **4.8.4 Paints, Solvents/Flammable Liquids, Gasoline and Pesticides (Product Care)**

Product Care is a non-profit association established in response to the Recycling Regulation requiring brand owners of paint, solvents/flammable liquids, gasoline and pesticides to establish a collection program for consumers to return leftover products. This Regulation is intended to provide consumers with a safe and convenient method to manage household hazardous waste (HHW) and reduce improper disposal.

There is one full Product Care Depot in PRRD (at the Augusta Transfer Station). It collects all the materials under this program. There is no charge to drop off program products. The collected material is reused, recycled or used for its energy value. Product Care's web site [www.productcare.org](http://www.productcare.org) contains information on the types of products accepted through the program.

#### **4.8.5 Tree-Marking-Paint Stewardship Association**

The Tree-Marking-Paint Stewardship Association was formed by brand owners and distributors of industrial aerosol paint to manage industrial aerosol containers. Industrial aerosol paint is sold primarily in bulk to the forest industry or surveyors for the marking of trees, roads and other surfaces. There is currently a consultation paper reviewing the existing program ([www.treepaint.ca](http://www.treepaint.ca)).

#### **4.8.6 Used Lubricating Oils, Filters and Containers Program**

Since 2003 the British Columbia Used Oil Management Association (BCUOMA), a not-for-profit industry association, that administers the used oil, filter and container stewardship program, as a requirement of the Recycling Regulation.

Used oil is collected at the Augusta transfer station as well as garages and service stations.

#### **4.8.7 Medications Return Program**

Pharmaceuticals are a small but very important component of the waste stream affecting every household in British Columbia. Unused pharmaceuticals pose a significant health, safety and environmental hazard when improperly stored or disposed to the environment. In response to this concern, the pharmaceutical industry voluntarily established the Medications Return Program in 1996. Pharmaceutical producers are currently regulated under the Recycling Regulation and their program allows consumers to return (at no charge) their residual medications to most pharmacies in the province. As of 2004, over 90 per cent of pharmacies in the province participate in the return program.

The Residuals Management Group Ltd., through funding by the Post-Consumer Pharmaceutical Stewardship Association, administers the Medications Return Program.

In the PRRD there are four locations registered to accept used pharmaceuticals for safe disposal: Safeway, Shoppers Drug Mart, Wal-Mart, and Westview Pharmacy.

#### **4.8.8 Electronics Product Stewardship**

The Recycling Regulation requires the electrical and electronic industry to implement a product stewardship program. In response to this the Electronics Product Stewardship Canada (EPSC), a not-for-profit organization representing industry producers for electrical and electronic products, has developed a program that was implemented in August 2007 and delivered in partnership with Encorp Pacific Canada.

Collected materials are only be shipped to pre-qualified recyclers and processors who meet the exacting standards of the Vendor Qualification Program developed by Electronic Product Stewardship Canada. The authorized recyclers are E-Cycle Solutions, Sims Recycling and Teck Cominco. In addition to these primary recyclers, all of their downstream processors, are also

subject to the rigorous Recycling Vendor Qualification Program to ensure the highest levels of adherence to environmental, occupational health & safety, export and other standards. More information about the standards is available online at <http://www.epsc.ca/recycle/>.

The electronics industry has undertaken to improve the material content, design and construction of its products to improve environmental performance. Re-use of computers and other electronic equipment by charitable organizations and other individuals prior to them entering the collection system will be promoted.

The environmental handling fee is specific to product type and is designed to reflect the true costs of managing the program. The environmental handling fee will be evaluated on an annual basis and will be adjusted to ensure there is enough revenue generated to operate the program and that funds are not being over or under accumulated. Fees and categories for British Columbia are harmonized with fees in other provinces. The current fees are: televisions – from \$15 to \$45 depending on size, computers – \$10, printers – \$8, laptop/notebooks – \$5, computer monitors –\$12.

## 5. Solid Waste Management Plan Implementation Status

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Details on these and the status of other initiatives in the 1996 Solid Waste Management Plan are provided in Table 5-1.

In general, many of the initiatives were implemented or are in the process of being implemented. Using the categories in the 1996 Plan, the following is an assessment of each category's implementation:

- **Promotional and Educational Programs:** Implemented until 1997/8. Discontinued since then, with the exception of monthly recycling education published by the recycling contractor in the local paper.
- **Reduction and Reuse Programs:** Partially implemented.
- **Collection and processing of recyclables:** Implemented.
- **Materials recovery strategies:** Generally implemented for dry recyclables and scrap metal, less implemented for compostables, DLC materials, household hazardous waste.
- **Marketing recyclables:** Incorporated into Augusta contract.
- **Residuals Management:** Implemented.
- **Decommissioning and Remediation of Facilities:** Not fully implemented.
- **System Administration:** Partially implemented; no bylaws enacted, some cost-sharing issues remain unresolved.
- **Implementation of New Facilities:** Partially implemented (no composting or select waste landfill); study indicated that centralized composting would not be cost-effective.
- **Illegal Dumping:** Partially implemented, not consistent.

**Table 5-1. Program Status Checklist**

Type	Action Description	Status
<b>Educational and Community Involvement</b>	Allocate staff and budget	Regular education programs discontinued in 1997/8.
	Initiate pilot project and/or training in waste reduction with public institutions	
	Involve local groups and businesses in decisions about education programs	Current education efforts consist of requiring the recycling contractor to publish monthly recycling education tips in the newspaper
	Coordinate activities with Provincial Eco-Education program	
	Evaluate impact and effectiveness of program	
	Inform the public about upcoming changes	
<b>Waste Reduction and Reuse</b>	Life cycle costing in purchase of durable goods	Not done consistently
	Salvage options for demolition projects (particularly public sector)	Not applicable
	Encourage residents to make purchases with less packaging	Not done
	Scaled tipping fees to cover full cost of handling, processing and disposal	In place for residual waste
	Backyard composting education and subsidized equipment	Not done for several years
	ICI waste audits and waste reduction plans	Not done since 1997/8
	Free store/waste exchange	Not done
	Illegal dumping policy	Policies developed, minimal enforcement/implementation
Encourage waste planning to be part of planning for new business ventures	Not done	
<b>Collection and Processing of Recyclables</b>	Blue bag system in municipality	Curbside in place, different approach
	Collect garbage and recyclables with same frequency in municipality	Garbage weekly, recycling bi-weekly
	Self-serve depots in rural areas	In place
	Depot sites will be convenient to the public and cost-effective to supervise	Not all sites are cost-effective or supervised
	Issue an RFP for provision and/or operation of materials recovery facility (MRF)	In place (Augusta)
	Dry recyclables: <ul style="list-style-type: none"> <li>■ to be sorted manually (plastic, glass, metal cans, cardboard and other paper products)</li> </ul>	In place
	Scrap metal: <ul style="list-style-type: none"> <li>■ accepted and marketed</li> <li>■ fee charged for white goods with coolant</li> </ul>	In place

Type	Action Description	Status
	Compostables: <ul style="list-style-type: none"> <li>■ composter distribution</li> <li>■ Education, workshops through Malaspina College</li> <li>■ Centralized windrow composting (possibly in conjunction with sludge from MacMillan Bloedel's secondary treatment plant)</li> <li>■ Investigate feasibility of in-vessel composting</li> </ul>	<ul style="list-style-type: none"> <li>■ Done for a few years, not currently active</li> <li>■ Done for a few years, not currently active</li> <li>■ Not done</li> <li>■ Results of study indicated it would be very expensive</li> </ul>
	Household Hazardous Waste: <ul style="list-style-type: none"> <li>■ Education</li> <li>■ Lower tipping fees for separate waste than for mixed waste</li> <li>■ Build a storage area at the MRF site</li> <li>■ Hold collection days semi-annually if economically feasible</li> <li>■ Waste exchange days</li> <li>■ Lobby senior government</li> </ul>	<ul style="list-style-type: none"> <li>■ Not done</li> <li>■ Stewardship programs put in place</li> <li>■ At Augusta site</li> <li>■ Not done, very expensive</li> <li>■ Not done</li> <li>■ Some effort several years ago</li> </ul>
	Construction and demolition waste: <ul style="list-style-type: none"> <li>■ Encourage construction/demolition projects to salvage materials</li> <li>■ Encourage source separation of materials at construction/demolition sites</li> <li>■ Differential tipping fees for sorted/unsorted CD waste</li> <li>■ Provide information on sorting techniques and waste reduction strategies</li> <li>■ Consider requiring waste separation as condition of building permit or contract</li> <li>■ Arrange for processing and/or recycling of used construction material</li> </ul>	<ul style="list-style-type: none"> <li>■ Not done formally</li> <li>■ Not done formally</li> <li>■ Not done</li> <li>■ Not done</li> <li>■ Not done</li> <li>■ Augusta has developed private sector markets</li> </ul>
	Land Clearing Wastes: <ul style="list-style-type: none"> <li>■ Land clearing waste, excluding stumps, will be accepted at transfer site and chipped for use in windrow composting</li> <li>■ Support the establishment of an MOE approved forced-air burn system for land clearing waste, if a suitable site is found</li> </ul>	<ul style="list-style-type: none"> <li>■ Material is chipped and given to mills as fuel</li> <li>■ Not done</li> </ul>

Type	Action Description	Status
	Tires: <ul style="list-style-type: none"> <li>■ Will be accepted at transfer site, stockpiled, and shipped to available markets</li> <li>■ Balance may be exported as residual waste</li> </ul>	<ul style="list-style-type: none"> <li>■ Current practice</li> <li>■ Not permitted under contract with GVS&amp;DD. All tires are handled through provincial stewardship program.</li> </ul>
	Gyproc: <ul style="list-style-type: none"> <li>■ Provide information to builders and general public on minimizing gyproc waste</li> <li>■ Export gyproc to recycler in Lower Mainland</li> <li>■ Implement financial incentives to source separate material</li> </ul>	<ul style="list-style-type: none"> <li>■ Not done</li> <li>■ In place</li> <li>■ Not done</li> </ul>
<b>Marketing of Recyclables</b>	To be the responsibility of the operator	<ul style="list-style-type: none"> <li>■ In place</li> </ul>
	Local Markets: <ul style="list-style-type: none"> <li>■ Glass – reusable glass available through free store, crushed glass used in municipal road bed projects and/or in concrete</li> <li>■ Scrap metal – sell to local dealers or external markets</li> <li>■ Compost – to be used by municipality and RD, distributed or sold to residents</li> <li>■ Second hand goods – will continue to be diverted through thrift shops etc.</li> </ul>	<ul style="list-style-type: none"> <li>■ None of these in place</li> <li>■ Handled by Augusta</li> <li>■ Compost not produced</li> <li>■ Several outlets exist</li> </ul>
	External Markets: <ul style="list-style-type: none"> <li>■ Ongoing investigation of other markets</li> <li>■ Investigate cooperative marketing with Sunshine Coast RD and Vancouver Island RDs</li> </ul>	<ul style="list-style-type: none"> <li>■ Part of Augusta contract</li> <li>■ Investigated but not implemented (member of CWMA, an organization set up to facilitate marketing of materials)</li> </ul>
<b>Residual Waste Management</b>	Phase 1 – Export: <ul style="list-style-type: none"> <li>■ Export waste while investigating incineration systems and impact of 3Rs programs</li> <li>■ Construct a select waste landfill for disposal of inert materials</li> </ul>	<ul style="list-style-type: none"> <li>■ Complete</li> <li>■ Not done</li> </ul>
	Phase 2 – Incineration and Ash Landfill: <ul style="list-style-type: none"> <li>■ Identify sites for incinerator and ash landfill</li> <li>■ Re-tender incinerator</li> </ul>	<ul style="list-style-type: none"> <li>■ Controversial, not completed</li> <li>■ Not pursued due to success of export system</li> </ul>

Type	Action Description	Status
<b>Decommissioning and Remediation of Facilities</b>	Municipal Airport Site: <ul style="list-style-type: none"> <li>■ Continue operating for 2-5 years to dispose of inert material from municipal operations</li> <li>■ Close site per closure plan reviewed by MOE</li> </ul>	<ul style="list-style-type: none"> <li>■ Unknown</li> <li>■ Site not yet closed</li> </ul>
	Former Incinerator Site: <ul style="list-style-type: none"> <li>■ Perform environmental testing on/around site</li> <li>■ Develop remediation plan and implement</li> <li>■ Close site</li> </ul>	<ul style="list-style-type: none"> <li>■ None of the items has been carried out</li> </ul>
<b>System Administration</b>	Bylaw to establish a local service area for administration and operation of waste management services through the RD	<ul style="list-style-type: none"> <li>■ Cost sharing issues remain unresolved</li> </ul>
<b>Strategies for dealing with Illegal Dumping</b>	<ul style="list-style-type: none"> <li>■ Waive tipping fees for groups that clean up illegal dumped waste, subject to prior authorization</li> <li>■ Provide drop-off for old appliances at transfer site</li> <li>■ Use Leisure Services sign to regularly advertise tonnage of recyclables collected each month</li> <li>■ Use local media to promote awareness of illegal dumping</li> <li>■ Clean up illegal dump sites immediately</li> <li>■ Send warning letters to people whose garbage is found dumped illegally</li> <li>■ Promote annual Pitch-In campaign</li> <li>■ Make extensive use of information materials regarding prohibitions on and penalties associated with illegal dumping</li> <li>■ Consider establishing a program of fines and other penalties</li> </ul>	<ul style="list-style-type: none"> <li>■ Done on occasion</li> <li>■ In place</li> <li>■ Not done</li> <li>■ Seldom done</li> <li>■ Not regularly done</li> <li>■ Not done</li> <li>■ Little active promotion; tipping fees waived</li> <li>■ Not done</li> <li>■ Not done</li> </ul>
<b>Financial Plan</b>	<ul style="list-style-type: none"> <li>■ Annual costs will be recovered through a combination of cost-recovery tipping fees and property taxes, with a shift over time to reduced reliance on taxation</li> <li>■ Tipping fees will cover standard operating and maintenance costs of facilities; fees will be related to actual costs and will be paid by those generating the waste</li> <li>■ Tipping fees will be increased gradually to cover more operating expenses; tipping fees may be applied to recyclables to ensure adequate revenue</li> <li>■ Plan components that benefit the whole region (including debt repayment for capital costs, the education program and general administration) will be covered through taxation</li> </ul>	<ul style="list-style-type: none"> <li>■ Generally achieved</li> <li>■ For residual wastes only</li> <li>■ Tipping fees not raised or applied to recyclables</li> <li>■ Recycling depots and main facility financed through taxation and surplus tipping fee revenue</li> </ul>