

Five Year Review

2007, 2008, 2009, 2010 & 2011

Solid Waste Management Plan

Amendment No. 3

Cowichan Valley Regional District
2013



Contents

1. Executive Summary.....	3
2. Background	7
2.1. CVRD’s Solid Waste Management Plan	7
2.2. Five Year Review Requirement	8
3. Methodology.....	9
4. Changes in Waste Composition & Total Reduction Achieved	10
4.1. Changes Compared to Original Reduction Goals.....	10
4.2. A Description and Analysis of Changes in the Composition of the Solid Waste Stream	13
5. Solid Waste Management Planning.....	15
5.1. Regulation	16
5.2. Reduce	18
5.3. Reuse.....	22
5.4. Recycle	23
5.5. Recover	40
5.6. Residual.....	42
6. Analysis and Discussion.....	47
6.1. Description and Analysis of Any Changes in the Composition of the Regional Solid Waste Stream	47
6.2. Changes Compared to Original Waste Reduction Targets.....	48
6.3. Actions That Will Be or Have Been Initiated In Response to the Review	49

Preamble

This report is a review of CVRD's 2006 Solid Waste Management Plan (SWMP) pursuant to the Ministry of Environment's 'Preparation of Regional Solid Waste Management Plans' guide on five-year reviews. CVRD's SWMP was approved by the Ministry in 2007, and according to the SWMP this review was scheduled to occur in 2012. However, due to limited staff resources it was delayed until 2013.

To provide a measure of the region's waste disposal and recycling trends, CVRD conducts an annual survey of the amount of recycling and waste collected by the local recycling industry and CVRD's own transfer stations. The result is reported annually to the CVRD's Environment Commission, who acts as the CVRD's Plan Monitoring Advisory Committee. Data from 2007, 2008, 2009, 2010 and 2011 has been included in this report. Data from 2012 will be reported to the Environment Commission by the end of 2013.

1. Executive Summary

BC's Environmental Management Act requires all regional districts to submit a Solid Waste Management Plan to the Ministry of Environment. The Cowichan Valley Regional District (CVRD) submitted its first Solid Waste Management Plan (SWMP) in November 1995. Since then, the SWMP has undergone three major amendments: in 1997, 2002 and 2006. In addition to creating a SWMP, regional districts are required to conduct an evaluation and provide a report on the plan's effectiveness every five years. The Ministry of Environment's 'Guide to the Preparation of Regional Solid Waste Management Plans' requests the following:

1. "a description and analysis of any changes in the composition of the regional solid waste stream;
2. a description of the total reduction achieved compared to the original municipal solid waste reduction targets, including an analysis of any changes from the expected individual contributions of reduction, reuse, recycling and recovery activities;
3. documentation of the review of the report and any other review of the effectiveness of the plan by the plan monitoring advisory committee; and,
4. a description of any actions that will be or have been initiated in response to the review".

Detailed waste composition data is presently not available for the CVRD. Fortunately, waste composition data is available from the Regional District of Nanaimo (RDN), a neighbouring district with similar waste reduction and recycling regulations, programs, and initiatives. Due to the similarities between the two regions, it can be assumed that the CVRD's waste stream will have a similar waste composition to RDN. Waste composition data from RDN's 2012 study indicates that compostable organics account for over one third of the total waste stream. Other material categories that dominate the waste stream are: plastics, building materials/construction demolition and paper and paper products. As these materials represent roughly 70% of the waste disposed, they are CVRD's focus of current and upcoming diversion programs and initiatives.

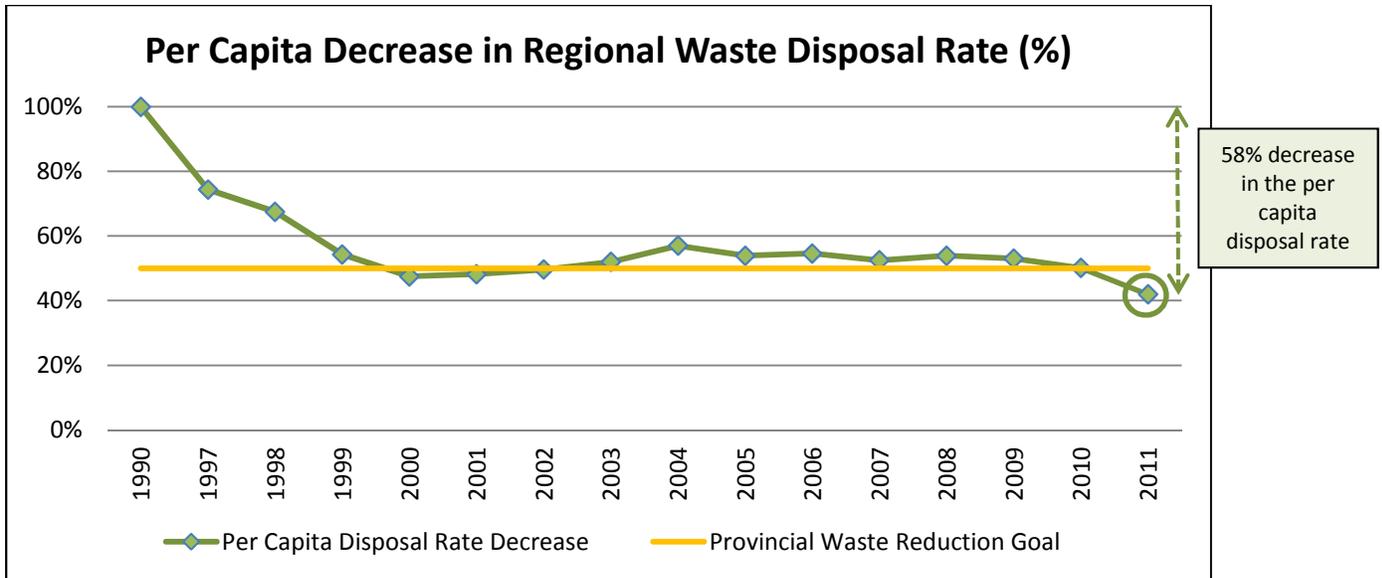
Examples of waste diversion programs that have been recently implemented are: recycling of aggregate type materials and the CVRD's automated curbside recycling program for Electoral Areas. The CVRD expects the automated curbside recycling program to increase residential recycling rates (including plastics and paper) by up to 30%. The program has the ability to integrate food waste/organics collection, expand to include member municipalities, and service the smaller or under-serviced commercial sector, if so desired in the future. Meanwhile, the growing number of residents gaining access to food waste/organics pick-up services through municipal curbside collection programs will assist in reducing the quantity of landfilled food waste/organics.

The CVRD does not currently have a regional waste disposal alternative as the local landfill and incinerators were closed in 1998. The CVRD continues to evaluate alternatives to current out-of-region waste disposal to Roosevelt Regional (Rabanco) Landfill in Washington State, USA. The CVRD conducted a joint feasibility study with the Nanaimo Regional District (RDN) in 2008 to examine residual waste management technologies and their applicability within the CVRD and RDN. In 2011, the CVRD conducted another study with RDN and the Capital Regional District (CRD) to further investigate waste-to-energy technologies. In both cases, the alternatives presented were not desirable by the RDN or CRD at the time, but discussions continue related to future opportunities.

Metro Vancouver is currently in the process of developing additional waste-to-energy capacity for their region. The process includes several phases of consultation and project development, expected to span until 2018. Although Metro does not identify out-of-area waste streams as possible sources of waste to be managed within their request for proposals, private sector proponents are able to accommodate additional waste streams within their proposals on their own initiative. Given the economies of scale realized with larger waste-to-energy proposals, and the growing number of smaller jurisdictions like the CVRD that currently export waste out-of-country, it is expected such proposals will have built-in allowances to accommodate these business opportunities. The CVRD and other jurisdictions have already indicated such interest to Metro and we will ensure it is also known to proponents when they are identified during the process.

Through an annual survey, the CVRD collects data on the amount of recycling and waste collected by the local recycling industry, which, together with data from the CVRD's own recycling drop-off depots, gives a "snapshot" of changing waste and recycling trends in the region.

As shown in the graph below, , the CVRD managed to reduce annual waste disposal by approximately 20,000 tonnes between 1990 and 2011 despite a population increase of 21,300. This represents a 58% decrease in our per capita disposal rate since 1990.



According to a study by the Ministry of Environment on 2010 waste disposal by BC local governments, the CVRD has one of the lowest per capita disposal rates – ranking 4th out of the 48 regional districts and municipalities included.

While it is hard to measure the contributed effect of each individual factor (reduce, reuse and recycle) in decreasing regional waste disposal rates, it is evident due to the 5.7% increase in per capita recycling rate since 1997 that recycling plays a significant role.

The CVRD’s Solid Waste Management Plan is ambitious, and many of its objectives are substantial, requiring significant time and resources to complete. The CVRD has fulfilled the majority of its plan objectives and will continue to work towards fulfilling outstanding plan goals.

The table below provides a summary of the outstanding and ongoing programs and initiatives in the 2006 SWMP that will be the CVRD's focus in the next five-year period:

Status	Initiative	Year(s)
Outstanding	<i>Close Peerless Road & Meade Creek ashfills</i>	2012-2014
	<i>Re-develop Peerless Road Recycling Drop-off Depot</i>	2012-2014
	<i>Remediate & close illegal waste disposal sites</i>	2014-2017
	<i>Develop a framework & requirements for future building construction and demolition permits</i>	2015-2017
	<i>Implement a formal Environmental Management System</i>	2012-2015
	<i>Phase-out the Multi-Bins</i>	2012-2015
Continue	<i>Re-evaluate the development of a South-end Depot</i>	2012-2017
	<i>Upgrade CVRD Recycling Drop-off Depots</i>	2012-2017
	<i>Update & develop current and new local bylaws to support CVRD's waste reduction</i>	2012-2017
	<i>Support & collaborate with solid waste stakeholders to develop new reuse and recycling initiatives</i>	2012-2017
	<i>Offer outreach and education on reduction, reuse and recycling</i>	2012-2017
	<i>Evaluate emerging local residual waste disposal options</i>	2012-2017

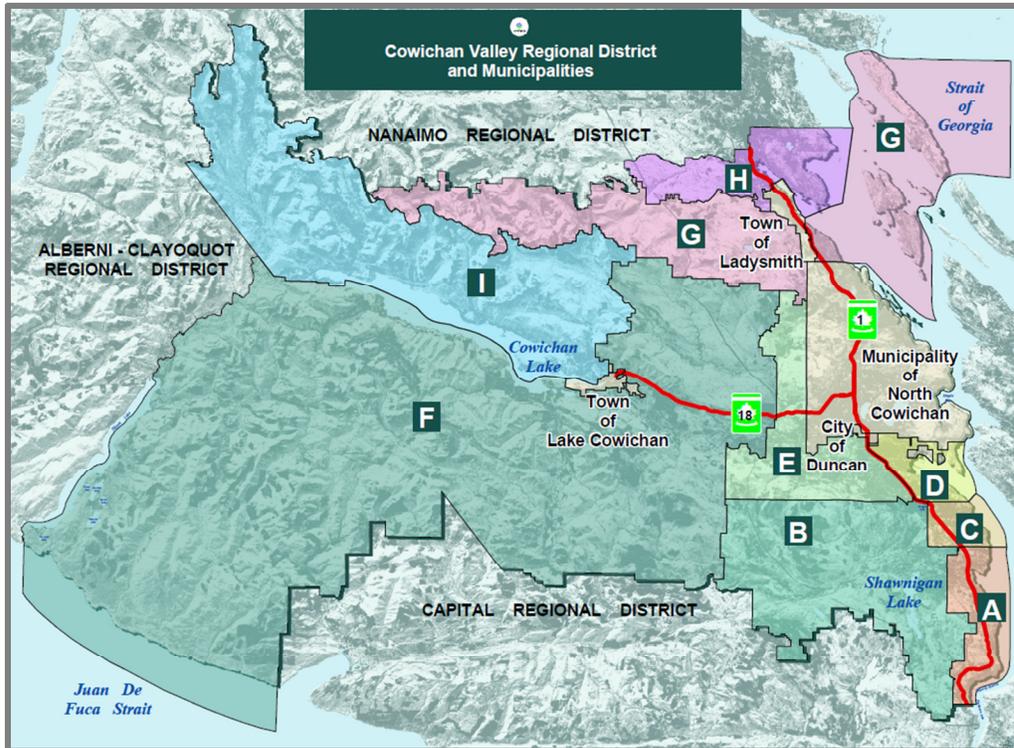
As new issues arise, the CVRD may develop and implement new programs and initiatives that fit within the scope of the current plan. For example, the CVRD recently identified the need to address illegal dumping of asbestos containing material and is currently working towards providing residents with a safe drop-off location for asbestos containing material.

To ensure that programs and initiatives fall within the scope of the current plan, the CVRD will work with its SWMP Plan Monitoring Advisory Committee (CVRD's Environment Commission and Solid Waste Sub-Committee).

Based on this 5-year SWMP review, the CVRD is confident that a major SWMP amendment is not required at this time, as the initiatives in the current SWMP are consistent with the CVRD's current and anticipated direction; that is the pursuit of zero waste. Additionally, the current plan contains a number of unfulfilled initiatives that still need to be completed and are expected to require significant staff resources. Should any external forces, private operators, changes in provincial regulation, or stewardship agencies or plans, affect a need for a change to the SWMP, this will be considered at that time and involve the CVRD Plan Monitoring Committee, local stakeholders, and the Ministry of Environment.

2. Background

In 1965, Provincial legislation provided for the establishment of regional districts throughout BC to secure representation and service in unincorporated areas, and to ensure a regional approach to matters beyond municipal boundaries. The Cowichan Valley Regional District was incorporated in September 26, 1967, and is managed by a Board consisting of 15 directors with representatives from four municipalities and nine electoral areas. The CVRD has a population of 80,332¹ and covers an area of 350,775 hectares.



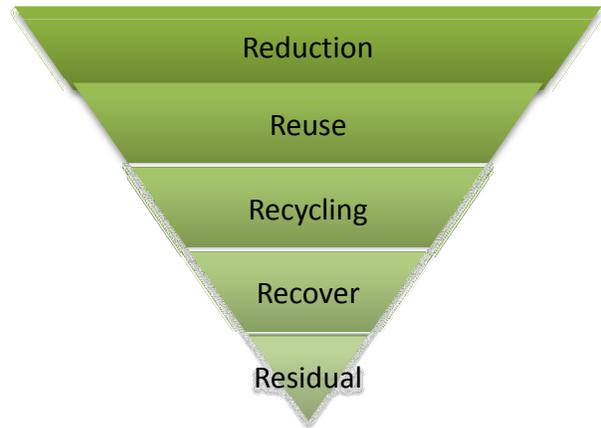
2.1. CVRD's Solid Waste Management Plan

The Environmental Management Act (previously named the Waste Management Act) was amended in 1989 to require that all regional districts submit a solid waste management plan before December 31, 1995. The Province endorsed a Municipal Solid Waste Management Strategy to reduce the amount of municipal solid waste requiring disposal by 50% by the year 2000. The core of the strategy is 'reduction', 'reuse' and 'recycling', as well as 'recovery' and 'residual management'.

The Cowichan Valley Regional District submitted its first Solid Waste Management Plan in November 1995. Since then, the SWMP has undergone three major amendments:

¹ Canada Census, 2011

- in 1997, the plan was amended to pursue the development of Bings Creek Solid Waste Management Complex;
- in 2002, the plan was amended to cancel the Hill 60 Landfill Development Project, which had been the core element in the original plan from 1995. Due to the lack of waste disposal options, the CVRD requested Ministry approval for waste export to Cache Creek Landfill while investigating long-term waste disposal alternatives (previously, the CVRD managed the region's municipal solid waste through incinerators at Meade Creek, Peerless Road and Koksilah Road and through landfill disposal at Koksilah Road. The landfill and all three incinerators were decommissioned in the late 90's); and,
- in 2006, the plan was amended to address the impending closure of Cache Creek Landfill and seek public approval for both the short-term continuation of waste export and exploration of alternative waste management options. The plan was also amended to address the implementation of a waste stream management licencing bylaw (CVRD Bylaw No. 2570) and a bylaw to regulate the open burning of land clearing debris (CVRD Bylaw No. 2020). The approval of the 3rd amendment was received from the Ministry on June 15, 2007.



2.2. Five Year Review Requirement

In addition to creating a solid waste management plan, regional districts are required to evaluate and provide a report on the plan's effectiveness every five years. The Ministry of Environment's 'Guide to the Preparation of Regional Solid Waste Management Plans' requests the following:

1. “a description and analysis of any changes in the composition of the regional solid waste stream;
2. a description of the total reduction achieved compared to the original municipal solid waste reduction targets, including an analysis of any changes from the expected individual contributions of reduction, reuse, recycling and recovery activities;
3. documentation of the review of the report and any other review of the effectiveness of the plan by the plan monitoring advisory committee; and
4. a description of any actions that will be or have been initiated in response to the review”.

In addition, and pursuant to CVRD’s 2006 SWMP, the CVRD Board will determine if, upon completion of the internal review, a change in overall direction for residual waste management in the CVRD is required. Any significant change of direction in regional residual waste management would warrant a plan amendment and a full public consultation process.

As part of the 5-year plan review, the CVRD plans to identify new and outstanding solid waste initiatives, programs, and capital works to be implemented in the new five-year period that fit within the existing plans’ framework and direction.

3. Methodology

Total reduction achieved compared to the original municipal targets

The CVRD conducts a survey every summer of the amount of recycling and waste collected by the local recycling industry which, together with data from CVRD’s own transfer stations gives a “snapshot” of changing waste and recycling trends in the region. Data is currently available to and including 2011. Although efforts have been undertaken to make the report as comprehensive as possible, it should be acknowledged that provision of information is voluntary, and as such, obtaining accurate or wholly accountable figures can be challenging. Having said that, the annual survey contains a fairly reliable representation of recycling efforts within the regional district. This annual survey’s design is similar to the Province’s proposed ‘municipal waste diversion calculator’, with the exception that the CVRD does not follow up on net quantities reported after processing as materials sometimes end up in international markets².

² The Packaging and Printer Paper (PPP) and Stewardship Plan (due to be implemented in May 2014 and is developed by Multi-Material British Columbia (MMBC) on behalf of producers), will require all Prospective Primary Processors (i.e. businesses responsible for marking the recycled material), to provide data regarding the chain of custody of all PPP material to ensure that it is processed and marketed from MMBC-qualified collectors. For example, the Primary Processor will be required to report on tonnes of each PPP material shipped to each downstream processors and tonnes of materials recycled and tonnes of processing residue shipped for disposal.

Changes in the Composition of the Regional Solid Waste Stream

Waste composition data, which is generated through taking samples of the general waste stream and by sorting the material types found in each sample into a set number of categories, is presently not available for the CVRD. Therefore, data from the Nanaimo Regional District's 2004 and 2012 waste composition studies has been utilized. As budgeting allows, the CVRD may conduct a regional waste composition study in the future.

Review by the Plan Monitoring Advisory Committee

As required by the Ministry of Environment, this report and any associated documents relating to the evaluation of the plan's effectiveness will be reviewed by the Plan Monitoring Advisory Committee. The CVRD's Environment Commission acts as the Plan Monitoring Committee for the Solid Waste Management Plan, as well as the Environmental Strategy Monitoring Committee, Plan Monitoring Committee for the Central Sector Liquid Waste Management Plan and as the Local Advisory Water Protection Advisory Committee. The Environment Commission is a community based advisory commission providing input to the CVRD Board of Directors on environmental and sustainability issues and consists of 15 members.

4. Changes in Waste Composition & Total Reduction Achieved

4.1. Changes Compared to Original Reduction Goals

As mention under section 3- Methodology, the Recycling & Waste Management Division collects annual data of the local recycling and waste management industry's recycling and waste reduction activities. The data provided represents private, governmental, and non-profit recycling and disposal activities over the course of a year.

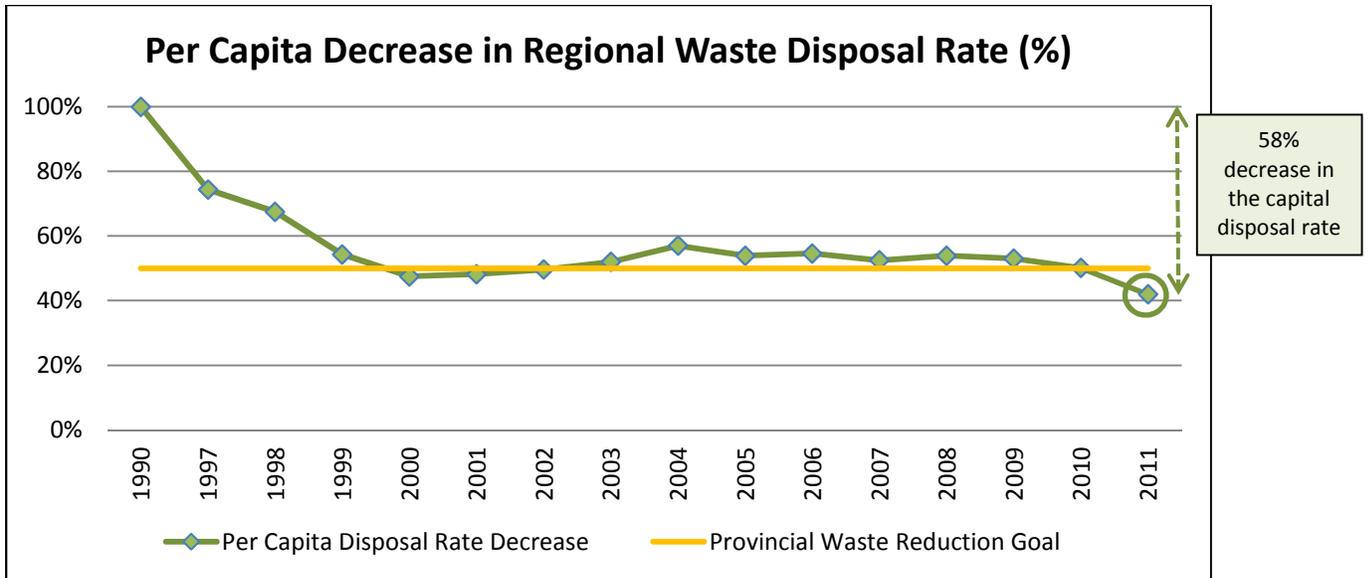
This annual data provides valuable information to both CVRD office staff and the public; moreover, the Ministry of Environment requires it. The Recycling & Waste Management Division also reports on this data to the CVRD Environment Commission, which acts as a monitoring committee for the CVRD's Solid Waste Management Plan.

Waste Disposal Totals

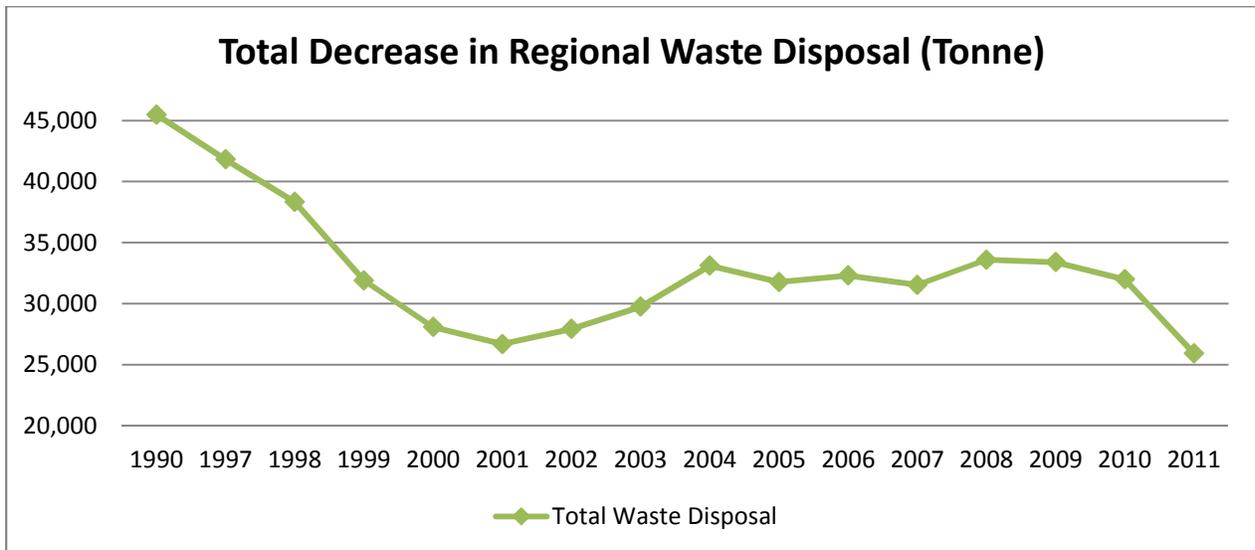
	1	2	3	4	5	6	7	8
Year	Population	Disposal to Private Facilities	Disposal to CVRD Facilities	Total Waste Disposed[1]	Per Capita Disposal Rate[2]	Per Capita Disposal Rate Decrease[3]	Total Recycling[5]	Recycling Rate (%) [6]
1990	59,059	11,000	29,500	45,475	0.77	-	3,661	6.48
1997	72,691	11,249	30,571	41,820	0.58	25.30%	18,691	30.29
1998	73,735	10,500	27,823	38,323	0.52	32.50%	20,019	29.60
1999	76,386	7,747	24,164	31,911	0.42	45.70%	23,566	31.72
2000	76,820	4,675	23,413	28,088	0.37	52.50%	26,107	33.25
2001	71,998	4,919	21,780	26,699	0.37	51.80%	29,817	33.02
2002	73,129	3,060	24,881	27,941	0.38	50.40%	33,769	34.09
2003	74,260	3,275	26,487	29,762	0.40	48.00%	37,877	31.69
2004	75,392	5,125	27,987	33,112	0.44	43.00%	41,173	39.13
2005	76,523	4,225	27,556	31,781	0.42	46.10%	46,730	46.14
2006	76,929	5,204	27,112	32,316	0.42	45.40%	57,975	64.21
2007	78,060	3,593	27,948	31,541	0.40	47.50%	67,503	68.15
2008	80,936	5,328	28,278	33,606	0.42	46.10%	85,924	71.89
2009	81,796	5,422	27,985	33,407	0.41	46.96%	71,802	68.25
2010	82,871	4,855	27,139	31,994	0.39	49.86%	69,294	68.41
2011	80,332	2,193	23,743	25,936	0.32	58.07%	73,038	73.80

[1] Sum of columns 2 and 3.
 [2] Column 4 divided by column 1.
 [3] Per capita rate decrease (1990 rate - current rate) divided by 1990 rate.
 [4] Includes 4,975 tonnes of alternative waste disposal (e.g. backyard burning etc.) during 1990.
 [5] Figures represent all private, governmental, and non-profit recycling
 [6] Total Recycling/Total Waste Potential

Given that the year 2011 was a census year, the stated population figures can be considered accurate. As the population predictions for the intervening years between federal census reports (undertaken every five years) are reliant on forecast projections, reverse fluctuations can be observed over time. Resultantly, the projected population appears to have been overinflated in the years leading up to 2001 and 2011; however, year 2006 appears to have been on par with the forecast projection.

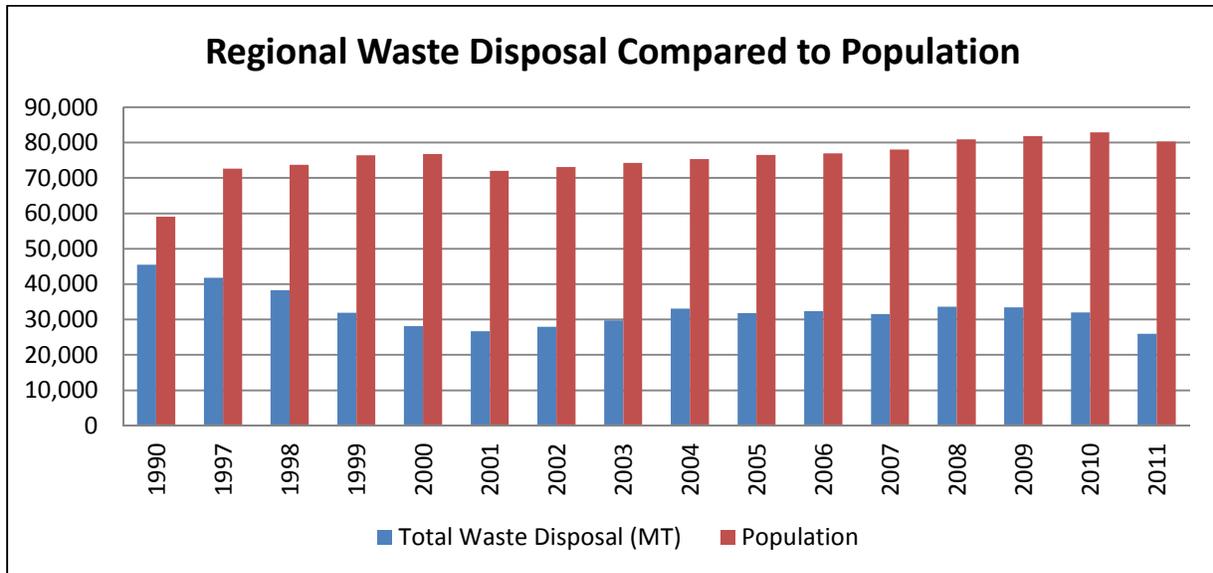


In year 2011, CVRD's Per Capita Disposal Rate Decrease reached 58%, which is a healthy margin over previous years. Also known as the Diversion Rate, this statistic measures the average waste disposed per person, each year, as compared to the baseline year of 1990. This disregards recycling itself and just measures reduction in disposal; this is where the previous Provincial diversion goal of 50% (that we have now exceeded) originated.



In addition to the per capita disposal rate decrease in percent form, it is also common to present per capita disposal in kilograms. Within the CVRD, the 58% per capita disposal rate decrease represents a 470 kg decrease between 1990 and 2011. Comparing 2007 with 2011, the per capita waste disposal decreased from 404 kg to 323 kg.

According to a study by the Ministry of Environment on 2010 waste disposal by BC local governments, the CVRD has one of the lowest per capita disposal rates – ranking 4th out of the 48 regional districts and municipalities included.



Between 1990 and 2011 the total tonne of waste disposed decreased with 19,500 tonnes, despite a population increase of 21,300.

The Recycling Rate is strictly how much of the total waste at any point in time is being recycled - a simple percentage. For 2011, our regional Recycling Rate rose to a record 74%.

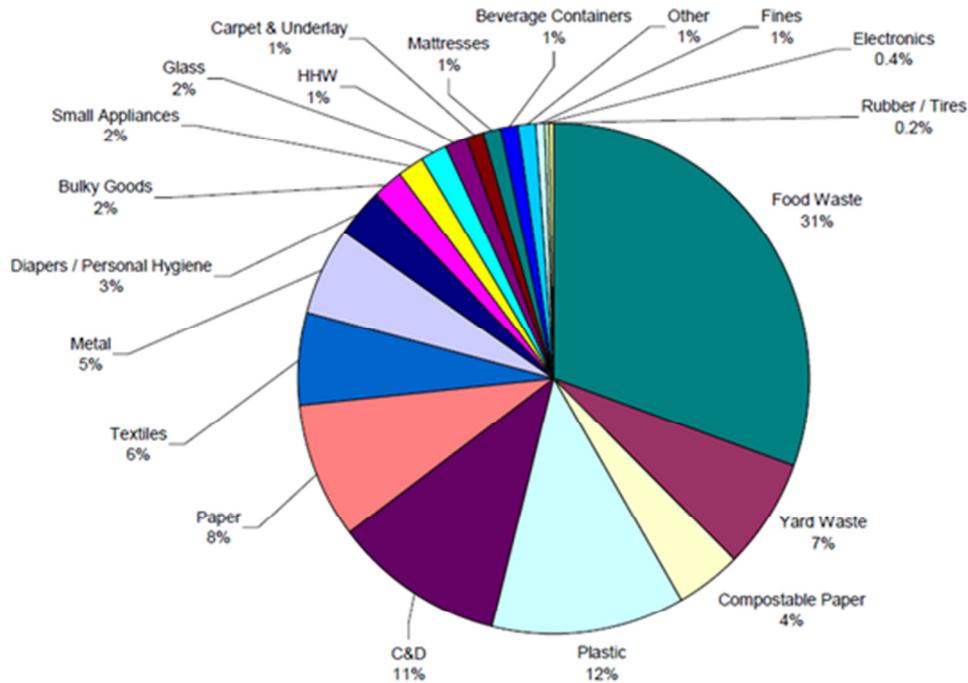
4.2. A Description and Analysis of Changes in the Composition of the Solid Waste Stream

Waste compositions studies help provide a snapshot of the relative disposal quantity of various material categories in the total waste stream. As the CVRD works closely with neighbouring regional districts, such as the Nanaimo Regional District (RDN) and has very similar programs and regulations relating to waste reduction and recycling, data from RDN’s 2004 and 2012 waste composition studies were used to estimate the composition of CVRD’s waste steam, as well as changes in the composition over time. In addition, RDN’s data is contemporary with the implementation of CVRD’s Solid Waste Management Plan (adopted in December, 2006) and this solid waste management plan review report.

Data from RDN’s 2004 waste composition study has shown:

- **compostable organics** (food waste, yard and garden and compostable paper) was the largest waste category, representing 42% of the total waste disposed;
- **plastic** was the second largest category, representing 12%;
- **construction and demolition material** the third largest, representing 11%; and

- **paper** the fourth largest category, representing 8%.



Source: RDN Solid Waste Composition Study Report (2004)

Data from RDN’s 2012 waste composition study has shown that, since the 2004 study:

- **compostable organics** (food waste, yard and garden and compostable paper) has decreased to represent 35% of the total waste disposed (a 7% decrease);
- **plastics** disposal has increased to represent 14% of the total waste disposed (a 2 % increase);
- **construction and demolition material**, (referenced as ‘building materials’ in the 2012 report) continues to represent 11% of the total waste stream; and
- **paper** increased to 12% (a 4% increase).

Compostable Organics

According to the 2012 waste composition study, households reduced their waste disposal of compostable organics over 10% between 2004 and 2012, while the largest contributor to this waste category; the industrial, commercial and institutional sector (ICI) increased their compostable organics disposal from 21.6% in 2004 to 26.2% in 2012.

Plastics

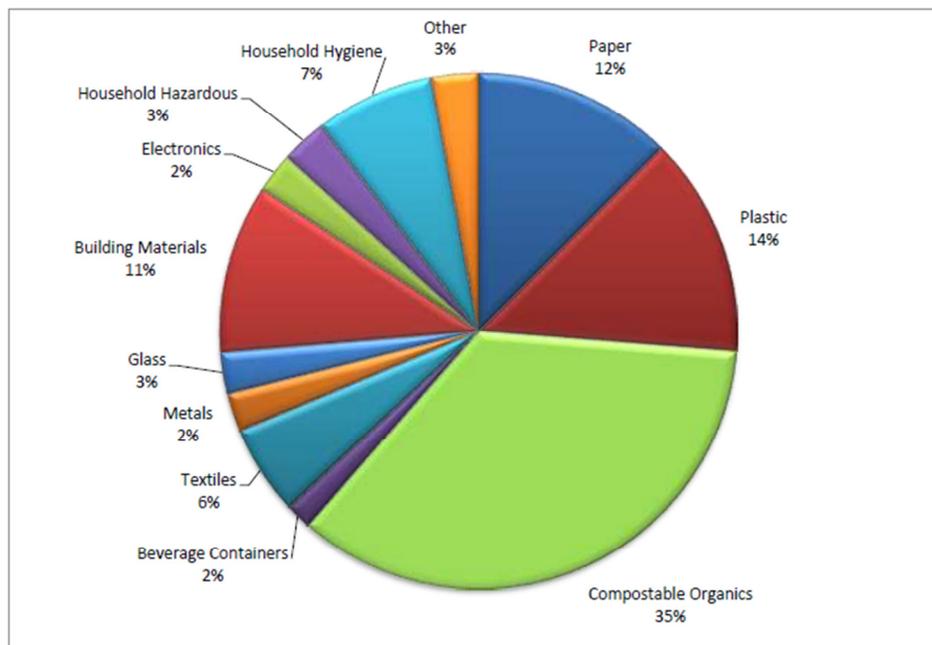
Households decreased their plastic waste disposal by 2% from 2004 to 2012 and ICI decreased theirs by less than 1%.

Construction and Demolition Material/ Building Materials

In 2004, this category was the third largest waste category. In 2012 it was overtaken by paper. There was no change in waste composition regarding construction demolition material/building material from year 2004 to 2012. There was also no significant change in the disposal percentage by sector (residential or ICI). The relative disposal quantity of this material category remained at 10.6% in 2012.

Paper

As of RDN's 2012 waste composition study, paper is the third largest waste category, representing 12.5% of the waste stream; an increase of 3% from 2004 (from 9.5 to 12.5%). ICI increased their paper waste disposal with 3.1% from 2004 to 2012, while the residential sector had a small decrease of 0.4%.



Source: RDN Solid Waste Composition Study Report (2012)

5. Solid Waste Management Planning

The following report sections provide a description/excerpt of the ongoing and new programs and initiatives identified in CVRD's 2006 SWMP. A brief summary below each excerpt describes the implementation progress of the listed programs and initiatives. For

ease of reference and comparison, this is the same structure used in the 2008 Annual Progress Report.

5.1. Regulation

Five bylaws currently regulate the CVRD's solid waste management system, with a sixth underway.

Regulatory initiatives outlined in the 2006 SWMP:

- “Final adoption and implementation of CVRD Bylaw No. 2020 –Landclearing Management Regulation Bylaw with education and enforcement measures to support as required.
- Continued implementation of CVRD Bylaw No. 2570 – Waste Stream Management Licencing Bylaw. Subsequent to issuing the majority of licenses for existing waste management facilities by early 2007, the CVRD will direct waste materials to licensed facilities only and proceed with enforcement measures against unlicensed facilities, in accordance with the Enforcement Policies and Procedures document. A list of facilities holding valid waste stream licenses will be maintained on the CVRD website, as will any facilities in non-compliance.
- Sustained, progressive enforcement of the material ban provisions of CVRD Bylaw No. 2108 - Solid Waste Management Charges and Regulations, with targeting of materials and generating sectors to be determined through observation of the incoming residual waste stream.
- Evaluate the impacts of expanding the commercial food waste ban provisions of CVRD Bylaw No. 2108 to include post-consumer commercial food waste (i.e. restaurant plate scrapings etc.), and de-packaging where feasible, with possible implementation to follow.
- Ongoing evaluation of the effectiveness of the existing regulatory structure in achieving CVRD waste management objectives. Development of new or expanded bylaws may be initiated in response to identified needs”.

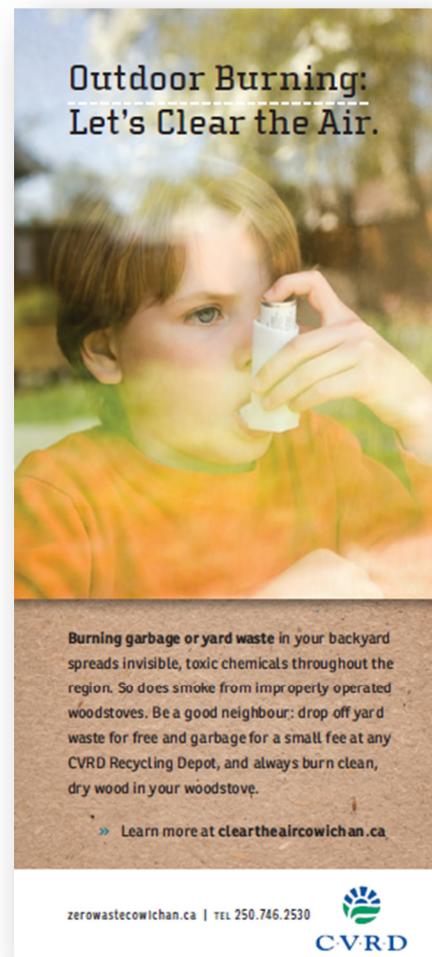
Bylaw No. 1958 – ‘Cowichan Valley Regional District Garbage and/or Recyclable Materials Collection, 1999’. This bylaw outlines the terms and conditions for the collection of curbside garbage and recyclable materials for CVRD Electoral Area residents. This bylaw will be amended to reflect bringing this service in-house.

Bylaw No. 2108 – ‘Solid Waste Management Charges and Regulations, 2000’ regulates the operation of all CVRD recycling depots and transfer stations, while also outlining disposal bans and tipping fees. An important part of achieving diversion goals is effective enforcement of the disposal bans outlined in Bylaw No. 2108. Staff conducts ongoing monitoring of commercial and residential waste and recycling disposed of at CVRD's

recycling drop-off depots. With increased awareness of Bylaw No. 2108, bylaw infractions are progressively less common. The bylaw is regularly updated as new items become recyclable and thus banned for disposal under the CVRD and stewardship programs. A pre-commercial food waste ban was implemented in 2005, and the CVRD may consider a post-consumer commercial waste (e.g. restaurant waste) ban in the future.

Bylaw No. 2570 – ‘Waste Stream Management Licensing Bylaw, 2004’ regulates all private and public facilities within the CVRD that manage municipal solid waste or recyclable materials. Through this bylaw, CVRD ensures a level playing field for all facilities. Less environmentally oriented operators, seeking to establish a facility in the region, have been discouraged by local bylaws and the need to meet the region’s rigorous standards. Self-policing, i.e. private operators ensuring that all regional waste and recycling facilities follow applicable requirements, is another positive side-effect of this bylaw. Currently, seven facilities are licenced under this bylaw with an additional facility in process. A list of facilities holding a valid waste stream management licence as well as facilities out of compliance is maintained on the CVRD’s website. In addition to regulating waste facilities, Bylaw No. 2570 also helps to control illegal dumping of municipal solid waste and recyclables. This bylaw has involved extensive resources to monitor existing facilities – especially local composting facilities. However, it has proven to be very effective at ensuring all facilities operate at or above industry standards. An amendment to address identified potential improvements to this bylaw is currently underway.

Bylaw No. 2020 – ‘Landclearing Management Regulation Bylaw, 2009’ works to regulate large-scale, open burning of landclearing debris in CVRD electoral areas such as is undertaken during development activities. Bylaw No. 2020 was developed to reduce the effects of smoke pollution on human and environmental health. The bylaw requires landclearing debris to be chipped or ground for reuse/recycling. Alternatively, the material can be burned using an air-curtain burner which works to reduce particulate matter. However, as the Ministry of Environment views air-curtain burning as “open burning” they require that the operator ensures a proper venting index



before burning landclearing debris. The Bylaw does not apply to persons carrying out “normal farm practices” within the meaning of the *Farm Practices Protection Act*; or a “forest practice” as defined by the *Forest and Range Practices Act*; or lands classed as Property Assessment Class 7 (private forest lands) by the *BC Assessment Authority*. A draft version of this bylaw was developed prior to the 2006 SWMP and the final version was adopted in 2009.

Bylaw No. 3209 –‘Ticketing Information Authorization Bylaw, 2008’ was passed in 2008 and permits CVRD’s bylaw officers to enforce the bylaws listed above. This allows immediate penalties to be applied without use of the courts.

Staff responded to a total of 147 formal complaints relating to Bylaw No. 2020 and Bylaw No. 2570 and issued nine tickets between January 2007 and December 2012. All investigation and enforcement activities were conducted in addition to ongoing routine monitoring of licenced facilities.

In addition to these bylaws, the CVRD recently developed a new backyard burning bylaw for the southern portion of the region in Electoral Areas A through E. The bylaw forms part of the CVRD’s ongoing air quality improvement initiatives and are authorized under the Local Government Act as well as the CVRD’s Air Pollution Control Service Establishment Bylaw No. 3258. This allows open burning to be addressed from a health perspective as opposed to a fire safety perspective.

Supplementary to the bylaws, an additional full time Bylaw Enforcement Officer was hired in 2012 with part time supportive duties including air quality, waste stream management licensing and illegal dumping.

5.2. Reduce

Waste reduction is a large component to CVRD’s approach to waste management and is thus the first ‘R’ in the 5R hierarchy of reduction, reuse, recycling, recovery and residual waste management. The CVRD primarily depends on education and communication to change people’s consumption habits or practices and the volume of material that requires recycling or disposal. Examples include but are not limited to: radio and newspaper ads, web resources and outreach programs, both in schools and online.

Existing programs and initiatives to promote waste reduction in the 2006 SWMP:

- “Adoption of the Zero Waste goal and promotion of Zero Waste concepts within the region;
- Active membership in the Recycling Council of BC (RCBC) and support for RCBC's efforts to further Zero Waste and other waste reduction initiatives;
- CVRD support for Provincial and Federal government initiatives to reduce the amount of waste being produced (i.e. National Packaging Protocol, Extended Producer Responsibility initiatives, etc.);
- Education and encouragement for purchase of recycled products or products made from recycled materials;
- Publication and distribution of the Environmental Guide and Recycling Directory, a comprehensive guide to local opportunities to reduce, reuse, recycle and protect the local environment;
- Collaboration with local municipalities, First Nations, and private or community organizations for development and delivery of waste reduction education programs;
- Provision of CVRD staff assistance to institutional, commercial, and light industrial (ICI) waste generators in developing plans to reduce the quantity of waste requiring disposal”.

The CVRD has worked to implement the above programs and initiatives while pursuing the new, in the 2006 SWMP, waste reduction initiatives below:

New programs and initiatives to promote waste reduction in the 2006 SWMP:

- “Publish the Environmental Guide and Recycling Directory primarily in an on-line format. The Guide will also be printed and distributed locally on a periodic basis;
- Publication of Earth Issues, Our Lifestyles and the Environment, a CVRD- produced environmental education manual targeting Kindergarten to Grade 5 students;
- Continued efforts to minimize the amount of waste generated by internal CVRD operations, which may include development of an Environmental Management System”.

In 2011, CVRD started work to engage citizens in the ‘Cowichan Zero Waste Challenge’ –a public education campaign to increase community involvement. More specifically, the Zero Waste Challenge aims to get residents and businesses talking about and taking action to reduce waste, reuse materials and products and recycle. Through a new website, zerowastecowichan.ca, citizens can nominate and learn about local ‘Zero Heros’ –

individuals who make smarter purchases, think about secondary uses for things they no longer need and recycle everything possible. The website also offers tools and resources to 'take action' towards zero waste.

BE A ZERO HERO
Living a Zero Waste lifestyle means making little changes at home, work and school for the benefit of our region and our planet. Here are some easy ways to help:

REFUSE Don't buy, instead rent or share things that you only need occasionally such as camping gear and tools.	REDUCE Buy in bulk (cleaning products, food) so you don't pay for excessive packaging.	REUSE Prolong the life of useful items by donating them to charity or selling them online.	RECYCLE Recycle even the smallest scrap of metal, paper or other materials to create jobs and save huge amounts of energy.	RECOVER Compost leftover food scraps in your backyard to create rich soil for your garden.
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Learn more at ZeroWasteCowichan.ca

ZEROWASTE CHALLENGE
NOTHING IS BETTER

The Zero Waste Challenge is part of the Cowichan Valley Regional District's Solid Waste Management Plan. For more information, contact the CVRD Recycling Hotline at 250.746.2540 (1.800.665.3955 in Ladysmith), or email es@cprd.bc.ca.

The above public education piece incorporated a simplified version of the 5R hierarchy to make it more user-friendly and focused on reducing consumption.

The CVRD continued to be an active participant in RCBC and in the consultation of emerging stewardship programs. The CVRD is also an active participant and supporter of the Coast Waste Management Association (CWMA), an organization with the mandate to meet the challenges and opportunities of local waste management.

CVRD launched a digitized version of the 'Environmental Guide and Recycling Directory,' and an educational manual 'Earth Issues, Our Lifestyles and the Environment' in 2008. Both offered extensive tips and information on how to reduce waste, the latter was targeted towards school children and designed for classroom use. In 2012, the CVRD launched a new version of the online Environmental Guide and Recycling Directory - the "Cowichan Recyclopedia". Using this directory, residents can easily find where to recycle just about anything locally as well as relevant lifecycle information.

As of 2008, CVRD has offered a series of classroom workshops, free-of-charge to local schools and community groups to empower children to engage in and promote zero waste, water conservation, sustainable transportation, composting, responsible consumerism, and

more. As of 2011, the CVRD has worked with Cowichan Green Community (CGC), a local environmental-not-for-profit to deliver these workshops to schools, reaching approximately 1,500 children per year. This program has been very well received by students and has inspired students to take their own initiatives to further increase recycling and reduce garbage disposal at their schools. In addition to the workshops, CVRD works with CGC to promote Zero Waste at a dozen public outreach events throughout the year.



Zero Waste Hero – Vincent Spronken, Owner of the Duncan Bottle Depot. “Awareness is the key. Pay attention to what you buy and how you use it, and what you do with it once you no longer need it.”

The CVRD continues to advise and collaborate with First Nations on waste reduction initiatives and programs on an as needed basis.

In 2010, to reduce waste generated internally and to create and implement other environmentally friendly practices, CVRD founded the “Green Team”. The Green Team is an interim step towards developing an Environmental Management System. The purpose of implementing an Environmental Management System is to improve resource efficiency, reduce waste and drive down operational costs. The development of a comprehensive, formal system is currently outstanding and will

The 3Rs of Christmas
Take the Zero Waste Challenge this holiday season

Did you know you can recycle unlimited amounts of wrapping paper, cardboard boxes, plastics and other Christmas packaging* at your curbside? These recycled materials become new products instead of being sent away for disposal, and preserve valuable resources.

For more tips on reducing, reusing and recycling, visit Cowichan's new online Recyclopeda. This searchable database of information and resources can help you get closer to zero waste.
www.zerowastecowichan.ca/recyclopeda

* ITEMS THAT CANNOT BE RECYCLED INCLUDE: FOIL-BASED WRAPPING PAPER, FOIL-LINED ENVELOPES OR GIFT CARDS, CELLOPHANE, BOWS AND RIBBONS, STYROFOAM. CANNOT BE RECYCLED AT CURBSIDE, BUT CAN BE DROPPED OFF FOR FREE AT ANY CVRD RECYCLING DEPOT.

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WEB: www.cvrld.bc.ca

require significant staff resources. Meanwhile, examples of reduction measures implemented by the Green Team are the “low hanging fruit” that would be targeted in a more formal EMS program and include: a fully electronic records management system, electronic paystubs for all staff, purchase of a 100% electric vehicle, four stream recycling in staff lunchrooms and composting of paper towels used in bathrooms.

Reduce, reuse and recycle has been part of the CVRD’s ongoing media messaging for years. For example, in recent years a holiday campaign has featured recycling options for seasonal items and encouraged giving experiences as gifts instead of material gifts with excessive packaging.

5.3. Reuse

Reuse, the second “R” in the 5R hierarchy focuses on the reuse of materials and products.

Existing programs and initiatives to promote reuse in the 2006 SWMP:

- “Promoting material and product reuse and repair opportunities available within the Cowichan region through the Environmental Guide and Recycling Directory and CVRD Recycling Hotline;
- Support for the Cowichan Recycling Exchange service offered in partnership with Cowichan News Leader/ Pictorial newspaper, promotion of the RCBC Materials Exchange, and other such waste exchanges;
- Implementing a trial period for ‘Free Store’ facilities at the Bings Creek Solid Waste Management Complex and the Peerless Road Recycling Drop-off Depot where unwanted, but useable items can be placed for removal and reuse by others”.

Planned initiatives to promote reuse in the 2006 SWMP:

- “Establish permanent ‘Free Stores’ at Bings Creek and Peerless Road and evaluate the opportunity to include a ‘Free Store’ component at the Meade Creek and the planned South-end Recycling Depot”.

As a result of the successful ‘Free Store’ trial period at Bings Creek in 2007 and the popularity of online trading forums such as Craigslist and Used Cowichan, the CVRD has opened a permanent ‘Free Store’ at the Bings Creek Solid Waste Management Complex and Peerless Road Recycling Depot. The economic downturn in 2008 provided further incentive for the reuse of materials as household incomes declined, thus increasing the popularity of the Free Stores. The CVRD plans to add a Free Store at the Meade Creek

Recycling Drop-off Depot after the remediation and closure of the onsite incinerator ash landfill.

The CVRD also “walks the talk” while developing its own facilities. For example, the now famous Kinsol Trestle restoration project reused portions of many of the larger timbers that had decayed sections for handrails and other smaller applications. Beams and timbers from the renovated Lake Cowichan Arena have also been repurposed for upcoming buildings at the Peerless Road Recycling Drop-off upgrade and expansion project. The Peerless project will also see the reuse of 45,000 m³ of residual ash, left from municipal incineration at the site, as a type of structural fill within a fully lined and contained engineered cell that will form the base of the new public drop-off area. Metals will also be recovered from the ash and the 1970’s incinerator building will be repurposed as the main recycling collection centre at the heart of the new facility.



Free Drop off at the Bings Creek Solid Waste Management Complex

The CVRD supports private and not-for-profit initiative to development local ‘Reuse Stores’ to enable reuse of building materials from deconstruction projects. The CVRD also promotes current reuse programs such as Bike Works though the Cowichan Recyclopeda. Weekday morning radio jingles featuring a myriad of environmental tips, with a focus on the encouragement of reduction, reuse and recycling, are also aired on the local radio station.

5.4. Recycle

The most prominent part of the CVRD’s waste management strategy is the third “R” in the 5R hierarchy – Recycling. Although reducing consumer consumption is the ideal, it is a long-term change and public demand for recycling options is ever-increasing.

Recycling initiatives and programs in the SWMP include promotion of recycling, curbside collection programs, multi-product neighbourhood recycling bins, commercial and multi-family recycling collection and more.

5.4.1. Promoting Recycling

Existing programs and initiatives in the 2006 SWMP to promote recycling:

- “Publication and distribution of the Environmental Guide and Recycling Directory;
- Operation of the CVRD Recycling Hotline;
- Support for and/or partnership with community groups incorporating recycling or ‘Zero Waste’ into public events (i.e. music festivals, trade shows etc.);
- Support for local municipal initiatives to reduce waste collected at curbside;
- Enforcement of material ban provisions of CVRD Bylaw No. 2108”.

Planned initiatives in the 2006 SWMP to promote recycling:

- “Outreach and education efforts focused around planned CVRD programs that divert food waste from the residential and commercial residual waste streams;
- Promotion of any new opportunities for material recycling at CVRD-operated or privately operated solid waste facilities;
- Evaluating the need of a region-wide initiative to support private haulers and local municipalities in promoting and delivering recycling services to multi-family dwellings;
- Promotion of free yard and garden tipping at CVRD facilities and other alternatives to burning yard waste;

In addition to launching an updated electronic version of the ‘**Environmental Guide and Recycling Directory**’, (described under section 4.2 – *Reduce*) the CVRD continues to operate the ‘**Recycling Hotline**’, allowing residents to call toll-free to find out where and how to recycle any item locally.

The ‘**Zero Waste Event Program**’ was initiated in 2008 and works to assist public and private event hosts to reduce the volume of recyclable material that is landfilled. The program offers equipment, signage, pick-up of portable four-stream collection stations (organics, recyclables, refundable, garbage), along with free tipping. In addition to the event programs, CVRD offers the ongoing “**Community Clean-up Fund**” to many local groups that volunteer to clean up illegal dumping sites and will cover expenses such as tipping fees of collected material, supplies for clean-up and lunch for the volunteers.

The CVRD continues to provide general education to **support local municipal recycling and waste reduction programs** and maintains a differential tipping fee for organics,

recyclables and garbage at Bings Creek Solid Waste Management Complex as a financial incentive for municipal recycling.

Stewardship items are banned from waste disposal and CVRD staff continues to **enforce material ban provisions under Bylaw No. 2108.**

The CVRD also continues to **work with local First Nations communities** to support better access to options for waste disposal and recycling. For example, Penelakut Tribe consulted with CVRD staff on how to set up an organics recycling program on their island.

The CVRD has created and plans to create many more recycling **opportunities for privately operated solid waste processing facilities.** Examples include: organics material composting, yard and garden material composting, mattress and couch recycling, re-processing of aggregate construction waste (i.e. recycling of bricks, concrete, asphalt, gravel, non-laminated glass, ceramic, porcelain and hardiplank). Starting in 2013, recycling of aggregate construction waste into a useable aggregate product is estimated to remove 2,000 tonnes of material from the waste stream per year. CVRD has also supported a not-for-profit organization's initiative to produce biodiesel from used cooking oil. Support was provided through funding three oil drop-off receptacles in the region and providing a vacant building near the CVRD's Bings Creek Solid Waste Management Complex for the biodiesel production. Striving towards improved communication and creating new regional recycling and waste reduction opportunities and stronger local industries, the CVRD plans more regular consultation with solid waste industry stakeholders in the coming years.



Since 2007, CVRD offers **free yard and garden drop-off** at CVRD's recycling drop-off facilities. The CVRD also contracts a private composting facility for the collection and composting of yard and garden material dropped off for free at their facility in South Cowichan. Through this free yard and garden drop-off service offered at these four facilities, the CVRD diverted 20,500 tonnes of yard and garden material from the landfill between year 2007 and 2011. Collection increased by 23% from 2007 to 2011. Free yard and garden drop-off is promoted in conjunction with the "Clear the Air Cowichan" campaign, focusing on all aspects of burning, including health effects, cleaner home heating, and open burning regulation.

Starting in 2008, CVRD offered **free tipping of residential loads of organic food waste** up to 5 gallons per person per day at Bings Creek Solid Waste Management Complex. The CVRD also offers occasional 'free compost give-away' at this facility to promote and complete the 'recycling loop' in people's minds.

Through a **Backyard Composter Program**, the CVRD offers subsidized sales of backyard composters. This program has been offered biennially (every two years) throughout the duration of the current plan. Backyard composters were offered at one third the regular retail price. Over 8,000 composters have been sold to date significantly reducing the volume of food waste that ends up in the waste stream.



The Earth Machine Composter

The CVRD purchased an expanded polystyrene densifier in 2010 to enable **recycling of foamed polystyrene**. (Foamed, or expanded polystyrene is known to most people as Styrofoam™). For the majority of consumers, expanded polystyrene is regarded as a one-time use product, thus large quantities are thrown away in the regular garbage. In the past, the light-weight nature of this product made recycling difficult as significant quantities must be collected in order to achieve economies of scale. Since purchasing the densifier, CVRD can offer expanded polystyrene recycling at all CVRD recycling depots, saving thousands of tax dollars in waste export disposal costs. Polystyrene is in high demand on the Mainland, where the compacted polystyrene is 'upcycled' into new consumer products.



Polystyrene foam before and after processing through the densifier

CVRD has worked with private waste haulers and local municipalities to **promote and deliver recycling services to multi-family residences**. Multi-family units have seen expanded recycling collection service over the duration of this plan due to companies such as BFI (Progressive Waste Inc.) who have revamped many of the existing multi-family cardboard containers into 'multi bins'. The multi-bin accepts the same materials that a regular household can recycle through curbside collection. After implementing changes for existing customers, other multi-family dwellings were approached into adding the service to go hand-in-hand with the garbage service already provided. Today, almost every BFI customer has some form of recycling collection, whether it is in a dumpster or a tote. When residential packaging and printed paper (PPP) comes under the Recycling Regulation in May, 2014, it is expected that the remaining multi-family residences in the region without recycling collection will take advantage of this industry-funded stewardship program.

CVRD, with funding assistance from private businesses, has been working with local schools on the **telephone book recycling program**. Between 2007 and 2011, 53 tonnes of telephone books were recycled through this program. However, due to dwindling private funds, reduced interest from schools, the move to electronic based directory assistance and the new opportunity to recycle telephone books in curbside recycling, the program ended in 2012.

5.4.2. Curbside Collection Programs

Curbside collection is offered to single-family homes throughout the region. The recycling services between CVRD Electoral Areas, as well as between Electoral Areas and member municipalities have varied widely, both in level of service and cost to homeowners, with the result that contracts have been tendered separately in the past. To address this, the CVRD planned the following initiatives to promote curbside recycling:

Planned initiatives in the 2006 SWMP to promote curbside recycling:

- “Pending support from member municipalities, the CVRD will evaluate the feasibility of collectively tendering all contracted-out curbside-collection contracts within the region so that the CVRD and local municipalities may benefit from a ‘buying in bulk ‘approach.
- The CVRD will evaluate the feasibility of integrating residential food waste collection with existing curbside waste and recycling collection programs within the region. Evaluation will be conducted in partnership with local municipalities, industry stakeholders, and rural and urban residents.
- If the feasibility of a food waste collection services can be established, the CVRD will pursue region-wide implementation of residential food waste collection”.

In an attempt to **standardize the region’s curbside collection services** and reduce service cost the CVRD investigated the feasibility of collectively tendering regional curbside collection contracts. Although all jurisdictions agreed on the approach, the collective effort was undermined when a very attractive rate was offered to one the municipalities to continue with contracted services. Discussions still continue on this option today. In 2010, the CVRD entered into a one-year extension with the two companies providing curbside collection on behalf of the CVRD. The terms of this extension resulted in a 25%-50% increase to user fees. Due to this price increase, technological advances in collection, service delivery issues and the potential of access to Community Works Funding, staff were directed to look into an in-house curbside collection program. In 2012, the CVRD decided to pursue a fully automated curbside collection service, which will be more cost efficient, offer enhanced public service, improve neighbourhood aesthetics, be less labour intensive and physically demanding on the operators as well as reduce greenhouse gas emissions.

The in-house program will be implemented in 2013 and will provide wheeled totes to all users. Studies of similar program in other regions have shown that the recycling rates increase by as much as 30% and reduce waste disposal simultaneously. The program also has the ability to integrate residential food waste collection and expand to include member municipalities in the future or service the smaller or under-serviced commercial sector if so desired.



As of fall 2013, residents in Electoral Areas will use easy-roll recycling and garbage totes.

Three out of four member municipalities have implemented **curbside food waste/organics pick-up**; the Town of Ladysmith in 2006, the City of Duncan in March 2011 and the Municipality of North Cowichan in May 2012. In total, approximately 13,500 residential units had access to food waste/organics curbside collection in 2012. Thus, it is expected that the volume of food waste collected within the region will now increase annually.

Curbside food waste/organics pick-up is offered by a private waste hauling company to some residents in the southern Electoral Areas. Food waste/organics material collected by private companies is often taken directly to private composting facilities. As these composting facilities also process food waste/organics from out-of-region sources it is challenging to accurately estimate the volume of food waste/organics collected within the region.

CVRD provides ongoing support and education via the Recycling Hotline to residents with curbside food waste/organics collection programs.

In addition to private and municipal food waste/organics curbside collection, and in accordance with a commercial organics ban in 2002, private businesses (such as coffee shops and grocery stores) collect food waste/organics through their own programs and initiatives. Food waste/organics collected from these sources were either used as livestock feeds at local farms or shipped to composting facilities in or outside of the CVRD. All food

waste/organics collected through municipal curbside programs and at CVRD depots were consolidated at Bings Creek Solid Waste Management Complex before shipment to a contracted composting facility. From 2007 to 2011, approximately 10,000 tonnes of food waste/organics were collected from municipal and private programs and initiatives; half of it was consolidated at Bings Creek.

5.4.3 Multi Product Neighbourhood Recycling Bins

The CVRD operates seven unstaffed “Multi Bins” throughout the region as a way to offer a convenient drop-off option for residential recyclables. The Multi Bins are well used but unfortunately the host sites (recreational centres and private businesses) experience ongoing issues with littering, illegal dumping, arson and aggressive scavenging. In addition, the high degree of contamination with non-recyclables is an issue for the contracted materials processors.



Aging Multi Bin at Kerry Park Recreation Centre

Planned initiatives in the 2006 SWMP to promote recycling:

- “The CVRD will evaluate phasing-out the Multi Bin Program in the 2008 to 2012 period. If the region-wide program is discontinued, multi bins, or similar equipment, will remain in place at CVRD Recycling Drop-off Depots”.

As a result of the ongoing issues and aging bins, which are in need of replacement, the CVRD originally planned to discontinue this program after the construction of the south end recycling drop-off depot, the ‘Eco Depot’. In fact, the increasing cost of operating this system would have covered the entire cost of operating the Eco Depot. However, as the Eco Depot project was defeated by south-end residents in a referendum, the CVRD will continue the multi-bin program for the foreseeable future. The CVRD will evaluate options

again once program details for the proposed stewardship plan for printed paper and packaging developed by Multi-Material British Columbia (MMBC) on behalf of producers, unfolds. MMBC has indicated that they will not accept recyclable materials collected from unstaffed recycling depots, such as these multi-bins. This would add yet another challenge to the multi-bin program.

5.4.4. Commercial and Multi-family Recycling Collection

Commercial and multi-family residential units make up a significant proportion of waste generators within the CVRD and are typically underserved in terms of the availability of recycling and other diversion programs (e.g. composting). As a result, waste generated by these units typically contains a higher volume of recyclable materials than waste generated by single-family dwellings, which tend to be serviced by curbside recycling programs. Although the majority of commercial and multi-family units are within the jurisdiction of member municipalities, it is recognized that the waste they generate becomes the responsibility of the CVRD, and thus the CVRD has a vested interest in improving diversion rates for these units.

Commercial and multi-family housing recycling collection is currently voluntary, paid for by the users, and promoted to varying degrees by local private haulers offering the service to these sectors.

Planned initiatives in the 2006 SWMP to promote Commercial and Multi-family Recycling Collection:

- “Continue to emphasize the existing material ban provisions of CVRD Bylaw No. 2108 to encourage local businesses to make use of recycling opportunities;
- Evaluate the impact on the hauling sector and local business community of expanding the commercial food waste ban to include post-consumer food waste;
- In consultation with local municipalities and local haulers, the CVRD will evaluate the need for new initiatives targeting increased waste diversion from the commercial and multi-family sectors.”

Encouraging local businesses to make use of recycling opportunities occurs primarily via advertisement and online education, such as the Cowichan Recyclopedia, CVRD’s ‘Zero Waste Challenge’ and by featuring local business owners as ‘Zero Heroes’. A portion of local retailers collect and recycle products and material that they sell on their own initiative.

The CVRD has yet to evaluate an expansion of the food waste ban to include post-consumer food. With the implementation of the new PPP Stewardship Plan in 2014, CVRD has identified this as an opportunity to evaluate the inclusion of such a ban.

As described under section 5.4.1 –‘*Promoting Recycling*’, private waste haulers such as BFI offer recycling service to multi-family residents and to the industrial, commercial and institutional (ICI) sector. With the upcoming implementation of the PPP stewardship plan, multi-family buildings without recycling services, and without a bylaw to mandate it, may be provided the service for free.

5.4.5. CVRD Recycling Facilities

The CVRD has continued to expand the services at the three CVRD recycling depots: Peerless Road, Meade Creek and Bings Creek. These depots, particularly the flagship Bings Creek facility is very popular with the public and highly visible for the promotion of recycling.

To further stimulate recycling at the facilities, the CVRD has been working with the following guiding principles from the SWMP:

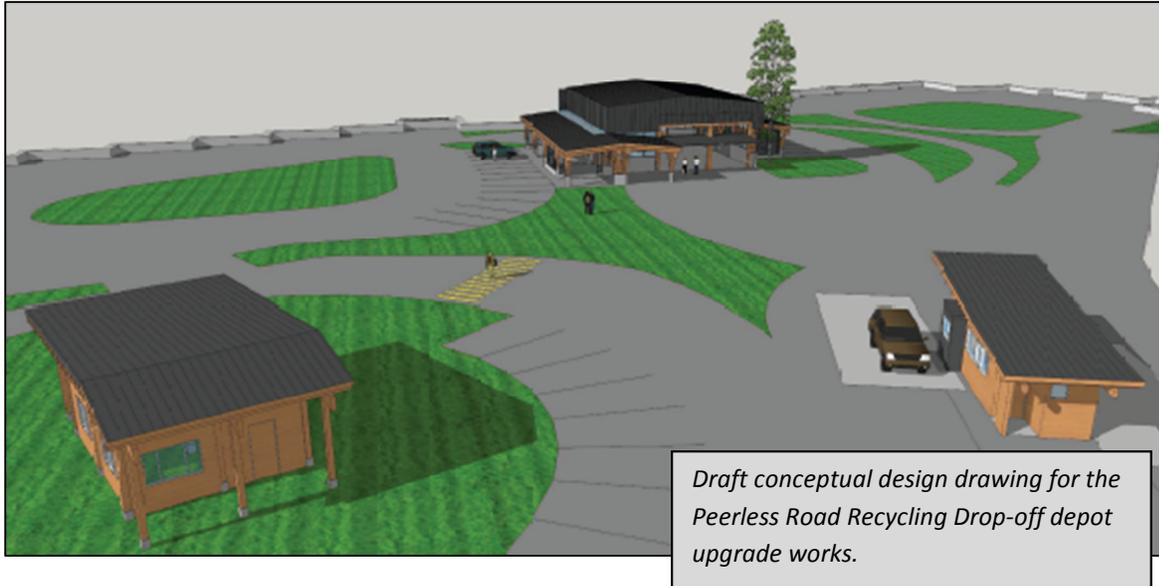
- **Maximize convenience** - offering a ‘One Stop Drop’ and local access to drop-off facilities;
- **Provide consistency** between the facilities in diversion and disposal opportunities;
- **Minimize hauling** e.g. through increased load densities, increased storage area, etc.,
- **Support Zero waste and other CVRD initiatives** such as safety of the public, CVRD staff and the environment in future site development plans; and,
- **Encourage private sector facilities** to divert waste from the CVRD system. This means that the CVRD will not develop any new, competing waste facilities unless there is a public need and interest.

Planned initiatives in the 2006 SWMP to promote recycling at CVRD recycling depots:

- “Develop “free side” and “paid side” traffic streams to maximize convenience and modify traffic flow at the facilities;
- Food waste tipping area – to target the diversion of food waste, a dedicated tipping area will be developed at Bings Creek;
- On-site material processing – to minimize hauling the CVRD will evaluate the feasibility of on-site processing at Bings Creek for some materials;
- Develop a South-end Depot – to ensure that Cobble Hill, Mill Bay, Shawnigan Lake and Cowichan Bay residents have convenient access to recycling service, the CVRD will develop a full-service waste recycling drop-off in the south end of the region.
- Improvement of current recycling infrastructure – to re-develop the west side of Bings Creek: install a cardboard compactor, permanent ‘Free Store’ and improve enclosure of hazardous materials”.

Peerless Road Recycling Drop-Off Depot

The CVRD received funding from the Federal Gas Tax Fund in 2011 for the purpose of expanding the existing Peerless Road Recycling Depot (Peerless Road) and to clean up approximately 45,000m³ of residual ash from a decommissioned municipal waste incinerator (the onsite incinerator was in use between 1980 and 1998). Remediation of Peerless Road and planned upgrades to the onsite recycling drop-off depot are an outstanding commitment of the SWMP. Site upgrades are overdue, as the increasing volume of customers has resulted in traffic safety concerns and long line-ups, despite the limited recycling options currently available on-site. With the proposed upgrades, the CVRD aims to turn the Peerless Road recycling drop off centre into a state-of-the art, user-friendly recycling drop-off centre which will further increase the region’s recycling rates and reduce waste disposal. A closure plan for the incinerator ash landfill has been prepared and closure works are anticipated to begin in the spring of 2013. The site plan will make use of the “free side” and “paid side” traffic pattern, designed for customer convenience and operational efficiencies.



Meade Creek Recycling Drop-Off Depot

Similar to Peerless, the site for the Meade Creek Recycling Drop-Off Depot (Meade Creek) had an onsite municipal solid waste incinerator in operation from 1976 to 1998. The ash from the incinerator was deposited into a former gravel pit onsite. The incinerator furnace was removed in 1999 and the building was converted into a recycling drop-off depot. The CVRD was awarded funding from the Provincial Brownfield Renewal Strategy to undertake needed preliminary studies, including both preliminary and detailed site investigations in 2009 to remediate the estimated 15,000m³ of incinerator ash. A draft closure plan was completed in 2012. A final closure plan is expected to be complete in 2014 and remediation is anticipated to occur in 2014-2015.

The remoteness of the Meade Creek site does not make it an ideal location for a recycling drop-off. As convenience is crucial when encouraging recycling, the CVRD may consider alternative locations in the future in which case a SWMP amendment will be required.

Bings Creek Solid Waste Management Complex -Recycling Drop-Off Depot and Transfer Station

The Bings Creek Solid Waste Management Complex (BCSWMC) opened in the summer of 1998 and has expanded six times since its inception to accommodate the growing volume and variety of recyclables.

The latest expansion was an additional building, a Household Hazardous Waste Building, which was completed in the spring of 2010, with the aid of Federal Gas Tax funding. This building provides the required covered storage area for the ever-expanding list of product stewardship items. The CVRD offers recycling for over 500 different items, including

hundreds of product stewardship items, for free recycling with the aim of maximizing convenience for visitors. The great number of highly visible recycling opportunities offered at CVRD's depots functions as advertisement to promote recycling and increases public awareness of the number of services available.

Community Works funding was also received to develop an organics tipping area at the Bings Creek facility, adjacent to the existing tipping floor. The works were completed in 2008 and the CVRD has plans to upgrade to three stream tipping capacity in 2013-2014. The goal is to align this upgrade with the inception of the automated curbside collection program. Allowing for three streams at Bings Creek will effectively reduce the number of trips required to tip garbage, organics and recyclables. Currently, collected garbage and organics are transported to Bings Creek for transfer to their designated destination, while curbside recyclables are transported to a privately owned consolidation point on Koksilah Road before shipment to a recycling sorting plant in Nanaimo. Having three stream tipping at Bings Creek will remove the need for the extra trip out to Koksilah Road. To minimize hauling, cardboard and foamed polystyrene (Styrofoam™) is compacted/processed at Bings Creek before it is shipped for final processing/recycling.

CVRD has continued with regular garbage tipping fee increases as an incentive to reduce waste and increase recycling. Tipping fee increases are considered in conjunction with tipping fees charged in neighbouring regional districts to reduce the likelihood of encouraging waste disposal in neighbouring districts.

South-End Recycling Drop-Off Depot

Development of a recycling drop-off depot for the South Cowichan region has been an outstanding commitment of the CVRD's Solid Waste Management Plan since 1995. Despite their contribution to the regional solid waste management budget, south-end taxpayers have historically lacked access to a full-service CVRD drop-off depot such as those available in other parts of the district. In 2010, a site was selected for development of a south end depot and a public consultation initiated. However, feedback from the community led to the CVRD Board's decision to hold a referendum on proceeding with a south end drop-off depot at the selected location; the referendum was defeated in November 2011. As a result, the CVRD will evaluate the need and options for a south-end recycling drop-off facility in the future, to ensure that residents in the South Cowichan region have reliable, long-term and equal access to a wide range of convenient recycling opportunities.

5.4.6. Multi-Material Recycling, Materials Recovery Facility and Construction & Demolition Waste

Planned recycling initiatives in the 2006 SWMP under the Multi-Material Recycling, Materials Recovery Facility and Construction and Demolition Waste include:

“In co-operation with its member municipalities the CVRD will:

- work with the building trade to develop a requirement that construction and demolition projects provide the opportunity for salvage of materials;
- ensure that specific sorting and waste segregation requirements are applied following material salvage. This agreement would be a condition of all new building construction and demolition permits issued within the CVRD boundaries.
- develop program guidelines to assist local builders in establishing effective site sorting techniques and waste reduction programs”.

“The CVRD will continue to:

- promote opportunities for CVRD residents to use licensed private recycling facilities;
- support private sector materials recovery facilities;
- support licensed C&D recycling facilities through pursuing enforcement measures against unlicensed facilities and through the ongoing expansion of recycling programs”.

The CVRD continues to promote recycling at licenced facilities through the Recycling Hotline and Cowichan Recyclopeda and has issued a number of RFP's in support of private sector material recovery. As a recent example to increase recycling of construction material the CVRD issued an RFP and awarded a local private business for the processing of aggregate construction waste in 2012. Furthermore, the CVRD expanded recycling of materials at CVRD recycling depots, such as asphalt roofing material, which is also collected at Peerless Road as of 2011. This expansion provided more processing opportunities for local private facilities. As mentioned in Section 5.3- *Reuse*, the CVRD works to support local private and not-for-profit initiatives to develop 'Reuse Stores' to encourage deconstruction projects.

To support licenced facilities, and as described under Section 5.1- *Regulation*, the CVRD has taken a number of enforcement measures against illegal dumping and unlicensed facilities under Bylaw No. 2570 within the duration of this plan.

The CVRD has an outstanding SWMP commitment to ensure that all new building construction and demolition permits issued within the CVRD follow specified, and yet to be outlined waste sorting requirements.

5.4.7 Landclearing Debris and Composting

Planned recycling initiatives in the 2006 SWMP under Landclearing Debris and Composting includes:

- “In support of ongoing efforts to improve local air quality, the CVRD will promote non-burning management practises. The CVRD will also enforce the provisions of CVRD Bylaw No. 2020, which regulates open burning of landclearing debris;
- Offer biennial subsidised sales of backyard composters;
- Provide free yard and garden drop-off at all of CVRD recycling facilities;
- Support licenced composting facilities though development of curbside food waste collection services. Evaluate local composting capacity prior to developing food waste collection service;
- Enforce CVRD Bylaw No. 2108 prohibitions on disposal of commercial organic waste; and
- Improve tipping and transfer of residential and commercial food waste at Bings Creek”.

A big portion of residential landclearing debris has been managed through onsite burning. As described under section 5.1 –*Regulation*, the CVRD created a ‘Landclearing Management Regulation Bylaw’, Bylaw No. 2020 in 2009 to address growing local air quality concerns. The CVRD encourages alternatives to burning such as chipping, grinding and reuse of material on site. Material smaller than 3’ in diameter and yard and garden material are accepted for free at all CVRD facilities for composting. If burning is the only feasible option available, Bylaw No. 2020 requires that it be done in an air curtain or trench burner to help reduce potential smoke pollution.



Jan 13, 2012 – Air pollution in Cowichan Valley

As mentioned in sections 5.4 -*Recycle*, the CVRD offers biennial sales of backyard composters, resulting in 8,000 units sold to date. The CVRD also offers free tipping of yard and garden at the three CVRD drop-off facilities and through a private licenced facility.

The CVRD recognizes that composting is a crucial part of working towards Zero Waste. Composting of biosolids, residential and commercial food waste (e.g. fish, dairy and brewery waste), yard and garden material, landclearing debris and wood waste is available at three licenced facilities in the region; two in Cobble Hill and one in Chemainus.

The CVRD will evaluate the licenced facilities' processing capacity for an expanded residential food waste collection and processing service, pending an increased interest from Electoral Areas to include food waste into their curbside collection.

The CVRD has earmarked \$820,000 of Federal Gas Tax Fund to be used towards establishing a regional/CVRD operated composting facility since local capacity to properly manage or accept compostable material was in question due to numerous complaints of odour and groundwater contamination. Since then, extensive efforts by local operators have resulted in dramatic improvements in on-site practices. As additional organics diversion is considered so will continued evaluation of the licenced composting facilities and the need for a regional facility and additional capacity.



As mentioned under Section 5.1 -*Regulation*, increased awareness of Bylaw No. 2108, including awareness of the commercial food waste ban, has resulted in reduced bylaw infractions.

As described under Section 5.4.5 -*CVRD Recycling Facilities*, Bings Creek tipping area was expanded to include food waste/organics tipping. Residential customers are able to deposit up to five gallons per day of residential food waste/organics materials at no charge into the recycling bins at Bings Creek.

5.4.8. Hazardous Materials

CVRD facilities offer free drop-off of some hazardous materials, including waste oil, oil filters, car batteries, fluorescent light tubes, etc. The Bottle Depot in Duncan and the Junction Bottle Depot in Ladysmith also accept some hazardous household materials.

Existing hazardous material initiatives outlined in the 2006 SWMP include:

- “Cooperating and assisting with the promotion of provincial initiatives;
- Incorporating household hazardous waste into the overall education and partnership programming;
- Promoting waste exchanges and swap days for materials, such as paint, developed by local community groups or provincial manufacturing associations.”

“Planned hazardous material initiatives in the 2006 SWMP include:

- “Support industry funded and operated management initiatives by considering disposal bans on specific targeted products;
- Consider provision for collection and disposal of specific items through CVRD Recycling Drop-off Depots, on an ongoing or periodically scheduled basis, in partnership with industry stewardship programs;
- Evaluate the feasibility of cooperative CVRD/private sector programs for the collection, recycling, or secure disposal of problematic materials, for which stewardship/return programs do not currently exist or which are not being managed effectively through private sector options alone”.

Multiple product stewardship programs involving hazardous waste materials have been implemented at all three CVRD Drop-Off Depots in partnership with stewardship agencies. Examples include: Paint, Pesticides & Flammable Liquids, the LightRecycle Program, the ElectroRecycle Program, Smoke & CO Alarms, Thermostats, Oil, Antifreeze, Batteries, and Cell phones. These programs have all been very successful at CVRD Depots. Over and above this, for non-conforming hazardous waste materials (eg. muriatic acid), the CVRD has considered Hazardous Waste Round-Up Events so that residents can safely dispose of these unwanted or out-dated materials for free on a broadly advertised collection event day. However, once established these events are expected, and have proven to be very costly. In the meantime, the CVRD encourages residents to ensure that these products are used for their intended purpose, as that is generally the most cost-efficient and environmentally friendly means of disposal. This is achieved through education and waste exchange avenues.

All materials that come under the Province’s Recycling Regulation are subsequently deemed as recyclable materials in CVRD Bylaw No. 2108 and thus banned from disposal in the garbage. In addition to CVRD Recycling Drop-Off Depots serving as collection host depots for these product stewardship items, many private sector depots offer the same

service locally. The CVRD includes mention of these private sector options in radio recycling jingles and more thoroughly in the online Recyclopedia.

5.5. Recover

The fourth “R” in the 5R hierarchy is recover. ‘Recover’ describes the ability to derive, or recover materials that cannot be reused or recycled. These materials often make up the bulk of what ends up in a landfill. Today, recovery often implies the use of technology to recover energy from waste. Currently, recovery within the CVRD is limited to the processing of clean wood waste into hog fuel at licenced facilities. The CVRD continues to meet with purveyors of new technologies and enter into short-term waste export contracts to enable a change in disposal methods should a viable alternative become available.

Planned recovery initiatives in the 2006 SWMP:

- “To evaluate the feasibility of the three types of technology – Gasification, Refuse Derived Fuel, and Waste-to-Energy processes - considered most likely to be a viable option for managing CVRD / RDN residual waste;
- Evaluate each technology’s potential markets for producing fuel, power, steam or other products from the residual waste streams;
- To identify considerations and a time frame for initiating a Request for Proposals process for selecting a specific waste management technology”.

The CVRD conducted a joint feasibility study with the Regional District of Nanaimo (RDN) in 2008 to examine residual waste management technologies (i.e. gasification, refuse derived fuel, and waste-to-energy) and their applicability within the CVRD and RDN. The study projected a disposal cost of approximately \$100 per tonne if the RDN and CVRD were to combine their waste streams and invest in recovery technology. While this represented a realistic cost for the CVRD, it represented a significant cost increase for the RDN, which subsequently decided not to move forward with a recovery facility at that time. The study also showed that the CVRD alone does not possess the economies of scale to justify an investment in new technology.

The CVRD conducted another study in 2011 together with the Capital Regional District and Nanaimo Regional District to further investigate waste-to-energy technologies. The Tri-Regional study showed that combining the solid waste expected from the three regional districts, after organics and recycling have been maximized, would result in 225,000 tonnes of waste per year in need of further treatment or disposal. Four sites were reviewed for the treatment/disposal – one in each district and one in Gold River, BC. Mass burn was confirmed as the most proven, and reliable and lowest cost technology, however it was still not optimum from a pricing perspective due the lack of adequate ‘economies of scale’ to

employ this technology. The site in Gold River fell into a desirable price scale (\$42 per tonne tipping fee) as they planned to accept waste from other regions as well, however the lower tipping fee would be offset by the additional cost of transporting waste to this location (estimated at \$69 per tonne for a total cost of \$111 per tonne). Given this was an average cost for all partners, actual cost for each partner would have varied with the CVRD's cost estimated at less than \$100 per tonne. Nevertheless, again this was not seen as desirable by the RDN or CRD at the time, and focus shifted elsewhere.

The selection of a future site will depend on factors such as political and social preference; desire to host a facility by the community, available land under appropriate zoning, good transportation access, preferred form of energy recovery (electricity or fuel), ability to utilize district heat in the surrounding area and minimizing transportation costs and GHG emissions.

As new, more affordable technologies and additional facilities are emerging within the Lower Mainland and elsewhere, the CVRD will continue to strive to find local waste disposal alternatives while considering those further afield.

Metro Vancouver's Integrated Solid Waste and Resource Management Plan identifies waste-to-energy recovery as the best approach for handling the waste that remains after all efforts to reduce, re-use and recycle.

Metro Vancouver has begun a process to develop additional waste-to-energy capacity for the region, to provide new energy sources - district heating and electricity, as well as ensure reliable management of municipal solid waste. The process includes 8 phases of consultation and project development, expected to span a period from 2013 through 2018. Metro anticipates the siting of five regional waste-to-energy facilities in the area in this period.

Although Metro does not identify out-of-area waste streams as possible sources of waste to be managed within their request for proposals, private sector proponents are able to accommodate additional waste streams within their proposals on their own initiative. Given the economies of scale realized with larger waste-to-energy proposals, and the growing number of smaller jurisdictions like the CVRD that currently export waste out-of-country, it is expected such proposals will have built-in allowances to accommodate these business opportunities. The CVRD and other Island jurisdictions have already indicated such interest to Metro and we will ensure it is known to such proponents when they are identified during the process.

5.6. Residual

The last “R” in the hierarchy is residual. Residual refers to the management of residual materials for which no higher use can be found.

The CVRD does not have a local landfill or waste incinerator as these were closed in 1998. The Koksilah Landfill was deemed full in June of 1998, and no further municipal solid waste was accepted at the site. In 1999, closure works were implemented and completed; staff continue to carry out sampling and monitoring activities as required by the 25 year closure plan.



Koksilah Landfill, 2012

Three groundwater monitoring wells were installed around the landfill and one in the immediate vicinity of it. Groundwater testing is carried out three times per year and includes selected domestic groundwater well near the landfill and surface water at and near the landfill. All domestic groundwater drinking wells has shown results that are well within the Canadian Drinking Water Guidelines. Surface water results to date have slightly exceeded the guidelines on occasion, but this can more likely be attributed to suspended sediment mobilized by surface runoff (or road runoff), than landfill leachate impact; these water quality impacts do not present a significant risk to aquatic life or habitat.

5.6.1. Residual Waste Disposal and Planning

CVRD began to export its residual waste to an out-of-region facility in 1998 and has continued to do so due to the lack of local disposal or recovery options. Initially, the residual waste was transported to Cache Creek Landfill in BC. However, as the waste export ceiling imposed by the Cache Creek landfill was 29,500 tonnes, during 2007 and 2008 CVRD had to redirect its waste from Cache Creek on account of the landfill nearing capacity. As of 2008, residual waste from the CVRD is transported to the Roosevelt Regional (Rabanco) Landfill located in Washington State, USA. Rabanco operates a high-tech waste-to-energy facility in conjunction with their landfill. The initial contract between the CVRD and Rabanco expired in 2011 and has since been renewed on a short-term basis.

At approximately \$90-\$100 per tonne disposal cost, or \$2 million annually, waste export provides a built-in incentive for the CVRD to constantly reduce the volume of waste produced within the region. Less waste shipped means greater savings for local residents and reduction, reuse and recycling initiatives and programs play a crucial role in reducing residual waste disposal. Several planned initiatives such as the introduction of organics diversion in both residential and commercial waste streams; enhancing recycling opportunities for the commercial and multi-family sector; providing convenient access to regional recycling depots; and the expansion of industry stewardship programs and reduced packaging initiatives will all help to reduce the volume of waste produced within the CVRD.

The combination of trucking, shipping and rail used to transport waste to the Roosevelt Landfill creates less of a carbon footprint than the previous transport arrangement with Cache Creek, which relied solely on trucking; and, unlike the Cache Creek Landfill, there is greater certainty regarding access.

The CVRD has Ministry of Environment approval for exporting waste to an authorized facility through 2017. The CVRD will continue to identify and evaluate emerging waste disposal options as they become available.

5.6.2. Residual Waste Collection

Recognizing that CVRD has limited involvement with the residential garbage collection outside Electoral Areas, CVRD's residual waste collection initiatives within the 2006 SWMP are:

- "Encourage member municipalities to implement further garbage can limits and/or reduce collection frequency;
- Apply enforcement of material bans (i.e. yard waste) to municipal collection crews;
- Support and assist local municipalities in integrating food waste collection into their existing waste collection protocols".

As mentioned under Section 5.4.2. – *Curbside Collection Programs*, CVRD supports the three member municipalities with food waste/organics curbside collection programs by assisting municipal residents who call the Recycling Hotline with program enquires. The CVRD has also worked closely with member municipalities in designing curbside programs, can limits, disposal bans, and food waste diversion approaches. The CVRD provides commentary on behalf of member municipalities to the provincial government and

stewardship agencies on broader initiatives e.g. the Printed Paper and Packaging (PPP) industry stewardship plan as proposed by Multi-Materials BC (MMBC).

5.6.3. Residual Waste Transfer

The majority of the region's solid waste is consolidated at Bings Creek Solid Waste Management Complex. Waste arrives at Bings Creek from Peerless Road and Meade Creek Recycling Drop-off Depots, residential and commercial collection services and residential and small commercial self-haul customers.

Planned Residual Waste Transfer Initiatives in the 2006 SWMP:

- “Provide capacity for drop off of self-hauled residual waste at the planned South-end Recycling Drop-off Depot.
- The CVRD will evaluate the feasibility of, and possibly develop, a residual waste tipping area for residential and small commercial self-haul customers adjacent to the main tipping floor;
- The CVRD will evaluate the benefits of cost savings and operational flexibility that may result from purchasing a roll off truck and containers for local materials transfer. If cost savings can be established, the CVRD may proceed with vehicle purchase or lease”.

As mentioned under Section 5.4.5 –*CVRD Recycling Facilities*, the CVRD has plans to upgrade to three stream tipping capacity in 2013-2014. Allowing for three streams at Bings Creek will effectively reduce the number of trips required to manage garbage, organics and recyclables. However, the upgrades will not include development of a residual tipping area for residential or self-haul customers next to the main tipping floor as space limitations mean that this accommodation is not feasible within the existing building. Providing capacity for drop-off of self-hauled waste at a south-end recycling drop-off depot is on hold pending further evaluation (see section 5.4.5 for more information).

An analysis carried out in 2011 indicated that purchase of a CVRD roll-off truck and bins would result in substantial cost savings for the CVRD for material storage and transfer, and the purchase was made later that year. The CVRD continues to rely on private sector service for additional bin rentals and for back-up service at peak times.

5.6.4. Non-CVRD Residual Disposal

Some residual waste (primarily banned commercial loads of construction and demolition waste) does not enter the CVRD waste management system. Although it is accepted and sorted into respective recyclable commodities locally by the private sector, the residual waste is disposed of out of region.

Residual waste disposal initiatives outlined in the 2006 SWMP:

- “The CVRD will continue to monitor the flow of residual waste from the region. If ongoing evaluation indicates that the CVRD’s overall objectives for management of regional solid waste are compromised by changes in private sector disposal practices, the CVRD will consult with local industry regarding regulatory and non-regulatory approaches to discouraging use of non-CVRD disposal facilities”.

While the CVRD does not license facilities that do not deal with municipal solid waste, annual data surveys conducted by CVRD staff provide a method for tracking volumes of waste that are generated in-region but potentially disposed of elsewhere. These wastes are primarily generated by the industrial sector or are comprised of construction and demolition debris, as noted above. As outlined in section 5.4.6 - *Multi-Material Recycling, Materials Recovery Facility and Construction & Demolition Waste*, the CVRD will continue to investigate ways in which the disposal of construction and demolition debris may be monitored and diversion plans for this material developed.

5.6.5. Disposal of Nuisance Wastes

There are a number of nuisance wastes, (e.g. biosolids and animal mortalities) for which the CVRD is not responsible to manage within the current regional waste system. However, the CVRD maintains an interest in ensuring that these wastes are managed appropriately and that disposal options are available locally.

Planned initiative of disposal of nuisance wastes outlined in the 2006 SWMP:

- “The CVRD will monitor local management options for these materials on an ongoing basis, and, if feasible, may provide for drop off at CVRD facilities if a need is identified”.

In 2008 the CVRD worked with the Ministry of Agriculture and Lands on a Farmed Animal Mass Carcass Disposal Emergency Planning Program should the need arise e.g. due to a disease outbreak. The plan was completed with the assistance of the CVRD Public Safety Division and relies heavily upon private sector resources and capacity.

In 2011 the CVRD applied for Federal Gas Tax Funds and was awarded approximately \$820,000 for development of a remote composting facility. The funds were obtained in anticipation of a growing need for a regional composting facility with the capacity to

process organics including food waste, biosolids/sewage sludge and animal mortalities. At the time funding was received, there were concerns regarding the limited capacity of private sector compost facilities and ongoing compliance issues under CVRD Waste Stream Management Licensing Bylaw No. 2570. Since that time, the capacity of local composting plants has increased while compliance issues have been largely resolved. As a result, the need for developing a regional composting facility may be re-evaluated.

5.6.6. Closure of CVRD Facilities and Illegal Residual Waste Disposal

Prior to 1998, the CVRD operated waste incinerators at Meade Creek, Peerless Road and Koksilah Road, with the residual ash buried onsite. In 2005, the Ministry of Environment requested that the CVRD develop and submit a closure and post closure plan for each landfill site.

Illegal disposal, including open burning of residual waste has historically occurred in rural areas of the CVRD.

Planned initiatives on closure of CVRD facilities and illegal residual waste disposal in the 2006 SWMP:

- “The CVRD recognizes that the closure of the ashfills is an outstanding commitment under the Solid Waste Management Plan. Permanent closure of these sites is an emerging priority for the CVRD, and will be overseen by the CVRD’s Project Engineer. The CVRD will complete all necessary site investigations, develop closure plans, and undertake any required remediation at the ashfill sites. The Koksilah Road ashfill is currently undergoing a Phase one investigation.
- Following the completed closure of CVRD ash landfills, the CVRD will initiate investigations of the illegal dump sites and develop an overall strategy for their closure”.
- The CVRD will continue to offer all existing programs to reduce the prevalence of illegal dumping within the CVRD”.

The closure and remediation works for Koksilah landfill was completed in 1999. Today, the site is inspected and sampled tri-annually, as part of the requirement of the 25 year closure plan. A formal monitoring report, summarizing sampling results and inspections, is submitted to the Ministry of Environment on an annual basis. The CVRD is working on a closure plan for Meade Creek and Peerless Road ashfills and expect works to be completed on Peerless Road in 2013-2014. The Koksilah ashfill was closed in 2012 as an initiative of Indian and Northern Affairs Canada in coordination with the Cowichan Tribes.

The CVRD has identified ten sites in the region that were historically used as illegal dumps for residential wastes. The CVRD has an outstanding commitment to remediate and close these sites, although as some sites are privately held properties, it is our understanding

some have already been remediated as part of site development works. With limited staff resources and the current priority to remediate and close the Peerless Road and Meade Creek ash fills, the ten illegal dumping sites will be addressed following these closures.

Despite the number of successful enforcement actions taken against illegal dumping and burning of residual waste, the CVRD continues to face challenges with illegal dumping. The CVRD will strive to identify and fine those who do not comply with Bylaw No. 2570 – the Solid Waste Management Licencing Bylaw.

6. Analysis and Discussion

CVRD's 2006 Solid Waste Management Plan is an ambitious plan and many of its objectives are substantial, requiring significant time and resources to complete.

6.1. Description and Analysis of Any Changes in the Composition of the Regional Solid Waste Stream

Waste composition data from neighbouring Nanaimo Regional District showed that compostable organics accounted for 42% of the waste stream in 2004 and 35% in 2012. Other material categories that represent a large portion of the waste stream are plastics (12% in 2004 and 14% in 2012), paper and paper products (8% in 2004 and 12% in 2012), and building/construction material (11% in both 2004 and 2012). Together, these four materials types represented approximately 70% of the total waste stream in RDN in 2012. As the CVRD offers similar waste reduction and recycling services as the RDN, it can be assumed that CVRD's waste would show a very similar composition. With such consistent statistics available and a clear opportunity to focus on these major components of the waste stream, this "low hanging fruit" will continue to be central to ongoing diversion efforts under the CVRD's SWMP priorities.

It is expected that the growing number of residents within the CVRD gaining access to food waste/organics curbside collection will assist in reducing the volume of landfilled food waste/organics (primarily within member municipalities but also in some Electoral Areas with private curbside service). The CVRD has yet to evaluate an expansion of the food waste ban to include post-consumer food.

Based on data from other regions, CVRD expects that the automated curbside collection program for Electoral Areas will increase recycling rates up to 30%. The automated program will also have the ability to integrate food waste/organics collection.

As convenience and awareness are crucial components when working to encourage recycling, CVRD has launched the “Cowichan Recyclopedia” to help residents recycle more and find relevant lifecycle information on products and materials. CVRD continues to offer one of the most comprehensive one-stop-drop recycling depots in the province, with over 500 items available for recycling at the Bings Creek Waste Management Complex. With highly visible, intuitively arranged recycling receptacles at CVRD’s facilities, visitors are made aware of the wide range of recycling options available to them. Increased awareness in combination with more service such as the printer paper and packaging stewardship plan (PPP) scheduled for May 2014, is expected to substantially reduce the volume of plastics, paper and other packaging materials disposed of in CVRD’s waste stream.

The private sector recycling and waste management industry is already becoming more sustainable in its practices and diversion services offered. It is expected that this sector will continue to grow and advance waste diversion opportunities with the collection, processing and marketing of materials.

6.2. Changes Compared to Original Waste Reduction Targets

Between 1990 and 2011, despite a population increase of 21,300 individuals, CVRD reduced the annual waste disposal by close to 20,000 tonnes. This represents a per capita disposal decrease of 58%, which is the best seen to date. Although waste disposal increased (2,000 tonnes) from 2007 to 2008, the total tonnage of waste disposed dropped by 5,600 tonnes over the duration of the 2006 Solid Waste Management Plan (2006-2012).

According to a study by the Ministry of Environment on 2010 waste disposal by BC local governments, the CVRD has one of the lowest per capita disposal rates – ranking 4th out of the 48 regional districts and municipalities included.

While it is hard to measure the contribution of each individual factor (reduce, reuse and recycling), it is evident due to the 5.7% per capita increase in the recycling rate that recycling plays a quantifiable and significant role in decreasing regional waste disposal rates.

While disposal decreases are often communicated in per capita units, and as shown in RDN’s 2012 Waste Composition, it is important to note that commercial businesses, institutions and industry (ICI) are responsible for a large percentage of the total waste disposed. To effectively continue to reduce waste disposal, recycling and waste disposal rates for all sectors need to be considered.

The CVRD actively continues to work towards developing new reduction, reuse and recycling opportunities through collaboration with local non-profits and private

businesses. Examples of new recycling opportunities include recycling of aggregate construction waste and mattresses. The CVRD also aims to find recycling avenues for furniture such as couches and armchairs in the future.

6.3. Actions That Will Be or Have Been Initiated In Response to the Review

Despite implementation delays due to operational challenges and staff shortages, the CVRD has fulfilled the majority of its plan objectives. In the next five-year period, the CVRD will:

- continue to work towards fulfilling outstanding plan goals;
- continue to work to offer current program;
- develop and address emerging issues; and,
- implement new programs as they fit within the frame work of the current solid waste management plan.

6.3.1. Outstanding and Ongoing Program and Initiatives

This table is a summary of outstanding and ongoing programs and initiatives described in CVRD’s 2006 Solid Waste Management Plan:

Status	Initiative	Year(s)
Outstanding	<i>Close Peerless Road & Meade Creek ashfills</i>	2012-2014
	<i>Re-develop Peerless Road Recycling Drop-off Depot</i>	2012-2014
	<i>Remediate & close illegal waste disposal sites</i>	2014-2017
	<i>Develop a framework & requirements for future building construction and demolition permits</i>	2015-2017
	<i>Implement a formal Environmental Management System</i>	2012-2015
	<i>Phase-out the Multi-Bins</i>	2012-2015
	<i>Re-evaluate the development of a South-end Depot</i>	2012-2017
Continue	<i>Upgrade CVRD Recycling Drop-off Depots</i>	2012-2017
	<i>Update & develop current and new local bylaws to support CVRD's waste reduction</i>	2012-2017
	<i>Support & collaborate with solid waste stakeholders to develop new reuse and recycling initiatives</i>	2012-2017
	<i>Offer outreach and education on reduction, reuse and recycling</i>	2012-2017
	<i>Evaluate emerging local residual waste disposal options</i>	2012-2017

6.3.2. Emerging Issues

The following emerging issues have been identified to-date.

Regional Composting Capacity

There is currently no immediate capacity issue for private composting facilities located within the CVRD to manage compostable material diverted by local private businesses, institutions and through municipal programs. However, the growing interest to divert more material from disposal as well as more out-of-region material being processed locally, may result in regional composting capacity becoming an issue in the future. As the CVRD works towards Zero Waste and in recognition of the large portion of organics still remaining in the waste stream, adequate capacity for any future collection programs will

need to be established prior to initiating such programs. The CVRD will monitor this situation closely and aim to provide any support or assistance necessary to ensure this component of the waste stream can be diverted properly and efficiently.

Illegal Dumping of Asbestos Containing Material

To address illegal dumping of asbestos containing material (ACM), which poses a health risk to both CVRD staff and the general public, the CVRD is working to provide residents with a safe drop-off location for ACM at one of CVRD's waste transfer facilities. Pending approval from WorkSafeBC and the Ministry of Environment, the CVRD aims to have this service in place in 2014.

Decreases in Garbage Revenue and Flow Control

Although the CVRD has a high variable cost structure associated with its waste export agreement, approximately 25-30% of current tipping fees contribute to general overhead and recycling program costs. This 'sin tax' for disposal artificially inflates such costs while subsidizing recycling costs, providing a financial incentive to divert waste from disposal.

The two threats to this situation are declining waste/revenue streams resulting from greater diversion, and 'leakage' whereby waste destined for disposal instead goes through private facilities elsewhere. Although both of these emerging issues are not significant at this point in time, they are impacting other Island jurisdictions as well as Metro Vancouver. It is expected that some of the costs associated with recycling programs will continue to decline as greater system efficiencies are realized and stewardship materials and costs are no longer the responsibility of local governments. Therefore, declining disposal revenues may be offset by declining recycling costs.

As a result, Metro has implemented waste flow management (known as flow control) to help achieve its sustainability principles. Currently, some garbage haulers are bypassing Regional Facilities (Metro Vancouver and City of Vancouver facilities) and hauling commercial/institutional and multi-family garbage collected in Metro Vancouver to adjacent jurisdictions for disposal. These haulers avoid material disposal bans and prohibitions in place to encourage recycling, do not pay their share of the cost of the regional system including waste diversion activities, and create an uneven playing field for other waste haulers and the recycling industry. Flow control is intended to ensure a sustainable system is developed that conserves resources and has all sectors contributing to the costs associated. Metro continues to consider means to achieve that goal, and the CVRD will be carefully considering all options and solutions identified.

Integrated resource management (IRM) is a broad term that in a waste management context often refers to managing more than one waste stream through a common means e.g. composting of biosolids, food waste and yard waste together. This approach is

preferred by the Province as it often results in greater economies of scale, and future funding may be directly linked to incorporating this approach. With local jurisdictions diverting greater volumes of food waste, and trying to have them managed as close to the source as possible, the capacity of smaller facilities – as well as the siting of waste management facilities is becoming a very sensitive and growing issue. Establishing sound operating standards, and taking a broader more sustainable IRM approach by all jurisdictions is being identified as a necessity going forward.

Plan Amendments

The CVRD will work with its SWMP Plan Monitoring Committee (CVRD's Environment Commission and Solid Waste Sub-Committee) to fulfill current and new programs and initiatives that fall within the scope of the current Plan. Failure to open or permanently close major facilities, as well as establishing a local site for the disposal of the region's municipal solid waste or investing in an out-of-region joint facility would require a major plan amendment. The CVRD will make minor amendments to the Plan by documenting the changes and consulting with appropriate stakeholders and the Ministry of Environment. It is assumed that the Ministry will determine whether a particular Plan deviation requires a major or a minor amendment, or any amendment at all.

As a result of this SWMP review, the CVRD is confident that a major SWMP amendment is not required at this time. The current SWMP is not limiting the CVRD's pursuit of zero waste objectives and contains several unfulfilled initiatives that will easily consume all existing staff time and resources. Should any external forces, private operators, provincial regulation changes, stewardship agencies or plans, affect a need for a change to the SWMP, this will be considered at that time and involve the CVRD Plan Monitoring Committee, local stakeholders and the Ministry of Environment.