

OVERVIEW OF CRD SOLID WASTE DIVISION

BACKGROUND

The Capital Regional District (CRD) became responsible for solid waste disposal in 1973 when Letters Patent were issued by the Province of British Columbia directing all regional districts to take control of solid waste disposal within their regions. Two years later the CRD acquired ownership of the Hartland landfill site, however, the landfill continued to operate under the direction of a private contractor until the end of 1984. The CRD took over management of the site on January 1, 1985.

SOLID WASTE MANAGEMENT PLAN (SWMP)

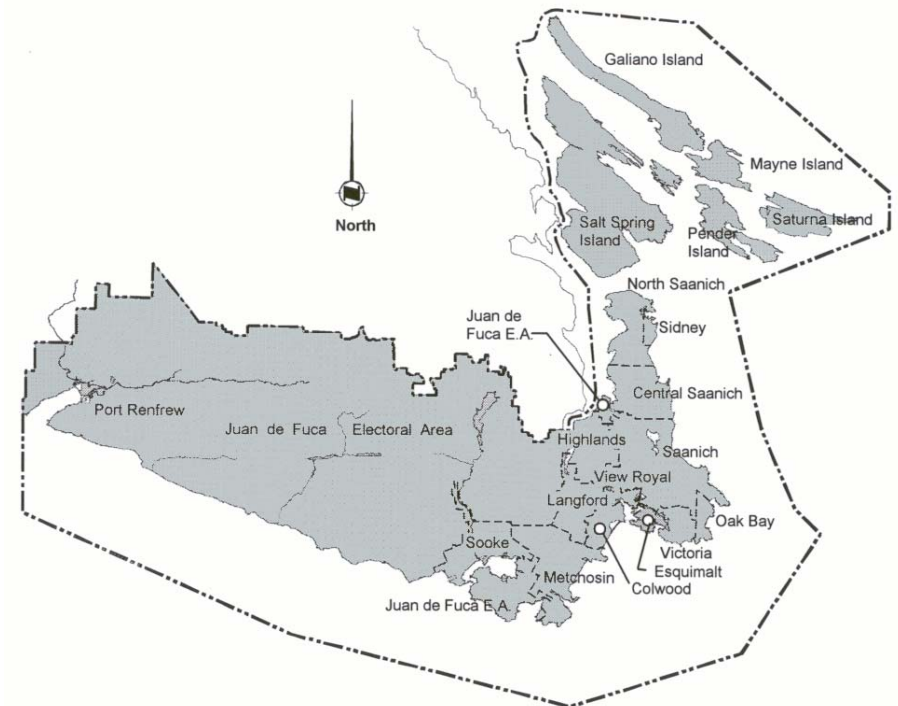
The Solid Waste Management Plan is the blueprint for all solid waste activities undertaken by the CRD. In 1987, the CRD developed its original SWMP which was approved by the BC Minister of Environment in January 1989. The plan called for 10% waste diversion by 1993 and 15% by 1998. The SWMP was subsequently revised and established the CRD's 50% solid waste diversion goal and confirmed the need to develop Phase 2 of the Hartland landfill. Revision 1 of the SWMP was completed in July 1991 and was formally approved by the Minister in January 1993.



At the request of the Ministry of Water, Land and Air Protection, the CRD submitted the SWMP Revision 2 in 1995. Revision 2 was approved in December 1995. It confirms the goal of 50% waste diversion and contains the framework to effectively manage the Capital Region's solid waste. It also reaffirms the CRD's intent to continue with numerous solid waste management programs while outlining new programs, including a solid waste burning policy, a stepped approach to regulating the storage of recyclable materials for environmental protection and the filling of Phase 2 of Hartland landfill.

CRD SOLID WASTE DIVISION

The Solid Waste division is part of the CRD Environmental Services department and consists of two groups – Solid Waste Operations (Hartland landfill) and Waste Diversion Operations and Planning (recycling/waste diversion programs).

CAPITAL REGIONAL DISTRICT

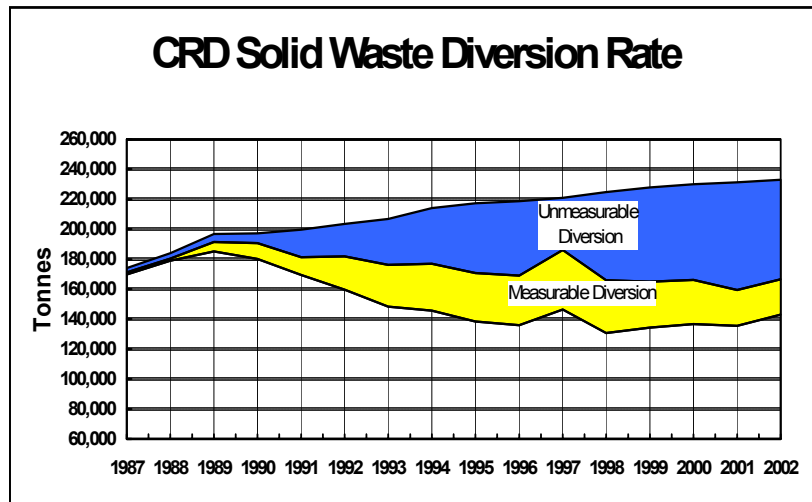


 This paper contains 30%  post-consumer recycled fibre

**Table 6
Diversion Rates (1992 - 2002)**

Year	CRD Population ⁽¹⁾	Projected Tonnage ⁽²⁾	Actual Landfilled Tonnage	Diverted Tonnage	Diverted Tonnes Per Capita ⁽³⁾	Percent Diversion ⁽⁴⁾
1992	304,200	203,416	159,634	43,782	0.144	22%
1993	308,720	206,826	148,341	58,485	0.189	28%
1994	321,585	214,017	145,585	68,432	0.213	32%
1995	326,010	217,310	138,303	79,007	0.242	36%
1996	328,880	218,643	135,869	82,774	0.252	38%
1997	329,135	220,850	146,442	74,408	0.226	34%
1998	334,871	224,698	130,604	94,094	0.281	42%
1999	339,643	227,900	134,257	93,643	0.276	41%
2000	342,718	229,964	136,654	93,310	0.272	41%
2001	344,567	231,204	135,425	95,779	0.278	41%
2002	347,095	232,901	142,940	89,961	0.276	39%

(1) Population data provided by CRD Regional Planning Services.
 (2) Projected annual waste based on 1989 waste generation rate of 0.671 tonnes.
 (3) Difference between projected and actual waste landfilled at Hartland.
 (4) 1997 reduction in diversion due to increased general refuse which was caused, primarily, by the winter blizzard of 1996.



CRD WASTE DIVERSION AND RECYCLING PROGRAMS

CRD WASTE DIVERSION STRATEGIES

The CRD utilizes the waste management hierarchy of reduce, reuse and recycle (the 3Rs) to work towards its 50% solid waste diversion goal. All solid waste diversion programs are funded through tipping fee revenues from Hartland landfill and from the sale of recyclables. Current 3R strategies to divert waste from Hartland landfill include:

- Landfill disposal charges
- Residential user pay garbage collection
- Recycling programs
- Composting programs
- Education and communication programs
- Landfill material bans/restrictions
- Product stewardship programs
- Other programs

These strategies are described in detail below:

LANDFILL DISPOSAL CHARGES

Landfill tipping fees provide an incentive to reduce the quantity of solid waste being brought to the landfill for disposal. The tipping fee structure includes a reduced fee for separated yard and garden waste to encourage the diversion of this material for composting rather than landfilling.

RESIDENTIAL USER PAY GARBAGE COLLECTION

Since January 1992, a residential user pay garbage collection system has been in place in the Capital Region's four core municipalities of Victoria, Oak Bay, Saanich and Esquimalt. The municipalities of Sidney and View Royal have also adopted a user pay system. The collection system limits the amount of refuse that each household may place out for collection to the equivalent of a single can per week. Additional cans or bags are only collected if residents purchase and attach garbage tags.

RECYCLING PROGRAMS

In 2002, CRD residential recycling programs consisted of the blue box curbside collection program, a funding program for recyclables collection from multi-family dwellings, drop boxes in rural areas not serviced by the curbside program and the Hartland recycling facility and salvage area.

In 2002, household batteries were added to the list of materials accepted at the Hartland recycling facility.

COMPOSTING PROGRAMS

The CRD operates a windrow composting facility at Hartland landfill for yard and garden waste which processes approximately 3,000 tonnes of material per year. The compost is sold through the public tender process. To further encourage composting, a total of approximately 25,000 backyard composters have been distributed since 1992 to the region's residents at a subsidized rate.

The final draft of the CRD regional composting bylaw was completed in 2002. A final review and consultation process will be undertaken and it is anticipated that the CRD Board will adopt the bylaw in October 2003, with the bylaw being implemented immediately for new facilities and 12 months thereafter for existing facilities.

EDUCATION AND COMMUNICATION PROGRAMS

Education and communications services are provided by the Environmental Education division and support all solid waste diversion services provided by the CRD as well as generally promoting behaviour changes based on the 3R's. These behaviour changes are understood to contribute significantly to the "unmeasurable diversion" (not directly attributable to CRD programs) of waste from landfill. Programs include:

- Creation and distribution of all advertising, promotion and education materials
- Media relations (print, radio and television)
- Presentations to groups and individuals
- Participation in outreach events and trade shows
- Facilitation of special event recycling

TABLE 5
2002 SOLID WASTE DISPOSAL COSTS ⁽¹⁾

Program	Tonnage	Cost	Cost per Tonne
Landfilling of Standard Refuse	142,940	\$6,534,463	\$44.66
Landfilling of Controlled Waste	3,384		

2002 WASTE DIVERSION COSTS⁽²⁾

Program	Tonnage	Cost	Cost per Tonne
Hartland Recycling Depot & Salvage Area	2,780	\$146,423	\$52.67
Composting Yard and Garden Waste	2,863	\$172,612	\$60.29
Blue Box Program	15,899	\$1,480,580	\$93.15
Oak Bay Recycling Depot	343	N/A	N/A
Gulf Island Recycling Depot Grants ⁽³⁾			
Salt Spring Island	1,135	\$158,920	\$140.02
Saturna Island	24	\$11,048	\$460.31
Galiano Island	49	\$27,682	\$564.93
Mayne Island	98	\$33,589	\$342.74
Pender Island	105	\$27,659	\$263.42
Other Programs			
Port Renfrew Recycling (21 tonnes)			
Telephone Book Recycling (179 tonnes)			
Paint Recovery Program (140 tonnes)			
Total Measurable Diversion	23,636	\$2,105,863	\$89.10
<u>Diversion and Education Programs</u>			
3Rs Education			
Home Composting			
Solid Waste Advisory Committee			
Community Clean-up Program			
Landfill Material Bans			
Non-Profit & Compost Demonstration Grants			
Municipal Environmental Educators			
Special Event Recycling			
Apartment Recycling Funding Program			
Total Unmeasurable Diversion	66,325	\$1,399,533	\$21.10
Community Outreach ⁽⁴⁾	89,961	\$192,699	\$2.14
Total Diversion Costs for 2002	89,961	\$3,698,065	\$41.11
Landfill Space Savings ⁽⁵⁾			(\$61.65)
Net Benefit (Credit) ⁽⁶⁾			(\$20.54)

(1) Landfilling costs include operating, administration and debt amortization expenses.

(2) Net of revenues received from the sale of recyclables and compost.

(3) Funding is provided to Island Recycling depots in lieu of blue box recycling service.

(4) Education programs contribute to total measurable and unmeasurable diversion.

(5) Net present value of landfill space based on \$30.67/m³ or \$61.65/tonne.

(6) Net benefit of recycling versus landfilling.

**TABLE 4
2002 WASTE DIVERSION TONNAGES BY MUNICIPALITY**

Municipality	Recyclables (tonnes)	Kg/Capita/Year ²	Yard Waste (tonnes) ¹
Central Saanich	885	54	396
Colwood	677	46	13
Esquimalt	886	52	19
Highlands	101	57	1
Langford	757	38	32
Metchosin	184	36	2
North Saanich	712	63	143
Oak Bay	1,190	64	55
Saanich	6,694	62	1,432
Salt Spring	1,135	110	0
Sidney	668	57	116
Sooke	336	36	2
Southern Gulf Islands	276	58	2
Victoria	2,188	28	629
View Royal	321	40	17
Other ³	3,763	N/A	4
Total	20,773	60	2,863

¹ Yard waste received at the Hartland composting facility only.

² Based on 2002 population estimates (347,095 residents).

³ Includes: Juan de Fuca EA, Hartland recycling depot, Oak Bay recycling depot, drop boxes, the telephone book recycling program and paint collection.

- Green Bonus award program for businesses
- Coordination of the Municipal Environmental Educator program
- Web site and Faxback information support

The CRD hotline (360-3030) is an essential part of virtually all education and communication programs, receiving 47,142 calls in 2002. Callers can access an automated voice messaging service 24 hours a day or speak with a hotline clerk during office hours 8:30am to 4:30pm (closed 12:00-1:00pm). The CRD hotline can also be reached by e-mail at: hotline@crd.bc.ca.

LANDFILL MATERIAL BANS

Landfill bans have been part of the CRD waste diversion strategy since 1991 and have only been implemented when viable recycling alternatives exist. Recyclable materials banned from disposal include drywall (1991); corrugated cardboard, white goods, tires, directories (1993); scrap metal, aggregate, concrete, asphalt, rubble, clean soil (1995) and paper fibres (1998).

PRODUCT STEWARDSHIP PROGRAMS

The CRD works with the Product Care Association to provide the region with a waste paint product stewardship program. The CRD collects waste paint at its Hartland landfill recycling depot and provide the only paint exchange in the region. The program is 100% industry-funded. There are also eight other industry-funded paint collection depots throughout the region.

The Product Care Association also provides collection of used solvents, flammable liquids, pesticides and gasoline at two private depots in the region.

OTHER PROGRAMS

Other CRD waste recycling programs include annual telephone book recycling campaigns in cooperation with Telus/Dominion Directories and Western Directories; diversion funding for registered non-profit repair and reuse organizations; municipal environmental educators' grants; and funding for the Southern Gulf Islands and the Port Renfrew recycling programs. The CRD also provided funding to the Greater Victoria Compost Education Centre, other community associations and the Coast Waste Management Association.

CRD SOLID WASTE DIVISION 2002 ACHIEVEMENTS

HARTLAND LANDFILL

- Added household batteries and mercury to the list of materials accepted at the recycling facility
- Worked with private company to develop landfill gas utilization project
- Initiated pilot leachate recirculation project
- Conducted approximately 50 site tours for over 1,100 people, including school groups, interested general public and Solid Waste professionals from around the world

WASTE DIVERSION OPERATIONS AND PLANNING

- Provided residential curbside recycling services to about 98,000 households within the region
- Implemented residential curbside recycling services in previously unserved areas of Sooke
- Conducted a detailed study of commercial waste plastics in partnership with the Environment and Plastics Industry Council
- Coordinated recycling subsidy agreements with about 1,000 apartment and condominium buildings in the region
- Sold 6,632 blue boxes to resident for use in the curbside recycling program
- Negotiated an extension of the waste paint collection program with the Product Care Association to 02 January 2004
- Coordinated CRD bylaw enforcement at Hartland landfill
- Collected 93,461 Western Phone and Telus telephone books for recycling, providing a fundraising opportunity to 84 non-profit organizations
- Began implementation of the Salt Spring Island transfer station bylaw to regulate solid waste transfer stations on the island
- Implemented recycling services for Piers Island
- Funded the Greater Victoria Compost Education Centre for the provision of home composting education and outreach
- Provided special event recycling services to 56 community events
- Funded four community clean-up projects

**TABLE 3
TOTAL REFUSE BY TYPE**

Type of Waste Declared	2001 Annual Total (tonnes)	2002 Annual Total (tonnes)	% Change from 2001
General Refuse	135,425	142,940	6%
Sub-Total	135,425	142,940	6%
<u>Controlled Waste</u> ¹			
Miscellaneous	440	820	86%
Liquid	425	204	-52%
Asbestos	362	413	14%
Screenings	1,551	1,077	-31%
Contaminated Soils	330	870	164%
Sub-Total	3,108	3,384	9%
Total	138,533	146,324	6%

¹ Controlled waste includes dead animals, condemned food waste, sludge, food processing waste, liquid waste, asbestos, sewage screenings and contaminated soils.

TABLE 2
TOTAL GENERAL REFUSE BY SOURCE ¹

Source Area	2001 Total (tonnes)	2002 Total (tonnes)	% Change from 2001
Victoria	54,266	54,468	0%
Saanich	35,818	39,839	11%
Langford	8,319	9,881	19%
Central Saanich	8,163	8,396	3%
Esquimalt	5,577	5,665	2%
Sidney	5,020	5,603	12%
Colwood	3,674	3,971	8%
Oak Bay	3,684	3,779	3%
Sooke	3,094	3,421	11%
Salt Spring Island	2,781	2,939	6%
North Saanich	2,075	2,109	2%
View Royal	1,248	1,422	14%
Pender Island	312	318	2%
Miscellaneous ²	490	261	-47%
Highlands	159	251	58%
Metchosin	278	246	-12%
Galiano Island	144	145	1%
Mayne Island	149	145	-3%
Saturna Island	38	43	13%
Port Renfrew	123	38	-69%
Hartland Landfill ³	13	0	-100%
Total General Refuse	135,425	142,940	6%

¹ Sources are as reported by drivers at the time of entry to Hartland landfill.

² Mixed loads originating from more than one municipality.

³ Excavated refuse from construction activities at Hartland landfill.

EDUCATION AND OUTREACH PROGRAMS

The Environmental Education division of the Environmental Services department provides education and outreach support for Solid Waste programs. In 2002 they:

- Assisted Solid Waste Advisory Committee (SWAC) prepare final consultation process for composting bylaw
- Implemented an ongoing outreach program for Hartland landfill residents
- Produced and distributed three *Hartland Happenings* newsletters
- Produced revised Hartland landfill brochure
- Placed advertising for all 11 Hartland holiday closures
- Revised leachate emergency response outreach plan
- Prepared and implemented leachate pipeline outreach plan for 2002
- Promoted 18 Hartland landfill tours which were attended by 360 people
- Produced new blue box schedules with easier calendar format (good until 2005)
- Developed radio ads to promote distribution of new blue box schedules
- Updated Web site to enable residents to check their blue box schedule by specific address
- Placed monthly blue box preparation ads
- Wrote Solid Waste articles for Environmental Update column in News Group newspaper
- Integrated Solid Waste information into other Environmental Service outreach programs (Regional Source Control, Trucked Liquid Waste, Roundtable)
- Delivered 3Rs school presentation (42 presentations to over 1,300 students and teachers)
- Hosted displays at 16 community events, providing information to over 3,000 residents
- Received 47,142 hotline calls (estimated to year-end)
- Coordinated hotline, Web site, fax back and brochure information
- Selected and awarded two Green Bonus awards for excellence in business waste reduction
- Planned and staffed EcoStar awards gala (Green Bonus awards presented)
- Produced recycling directory (three per year in print and on the Web site)
- Promoted telephone book recycling program
- Participated in United Nations conference planning and event (involving 1,531 local students)
- Prepared radio spots to promote residential recycling preparation and pick-up information over Christmas holidays
- Placed recycling and hotline advertising in the two yellow pages publications
- Provided media spokesperson and responded to public inquiries
- Coordinated Municipal Environmental Educators program

**TABLE 1
2002 DIVERSION BY PROGRAM (TONNES)**

	Newspaper	Mixed Fibers	Mixed Paper	Cardboard	Glass	Tin	Glass/Tin/ Plastic	Plastic
BLUE BOXES/TOTES								
Saanich		5,339					1,295	
Victoria		1,737					451	
Oak Bay		986					204	
Esquimalt		709					177	
Central Saanich		717					168	
Langford		596					161	
North Saanich		581					131	
Colwood		530					147	
Sidney		550					118	
Sooke		263					73	
View Royal		258					63	
Metchosin		134					50	
Highlands		78					23	
East Sooke		38					15	
Willis Point		21					8	
TOTAL		12,597					3,084	
DROP BOXES								
Sooke Disposal			135	8			60	
Port Renfrew		18					3	
Red Barn		11					4	
TOTAL		29	135	8			67	
MUNICIPAL DEPOTS								
Oak Bay			199	138				6
TOTAL			199	138				6
HARTLAND LANDFILL								
Compost Facility								
Recycling Facility			268	238			66	
Salvaging Facility								
TOTAL			268	238			66	
OTHER PROGRAMS								
Salt Spring Island	115		198	284	93			27
Pender Island	19		33	23				5
Mayne Island	25		16	19	9			6
Galiano Island	10		14	13	7			2
Saturna Island	5		6	7	3			1
Telephone Books								
Paint Programs								
TOTAL	174		267	346	112			41
GRAND TOTAL	174	12,626	869	730	112	0	3,217	47

Ferrous Metals	White Goods	Non-Ferrous Metals	Drywall	Batteries	Yard Waste	Tires	Propane Tanks	Oil Filters	Books	Misc.	Total
											6,694
											2,188
											1,190
											886
											885
											757
											712
											677
											668
											336
											321
											184
											101
											53
											29
											15,681
											203
											21
											15
											239
											343
											343
											2,863
1,165	500	26	283	58	2,863	98	26	3	47		2,778
										2	2
1,165	500	26	283	58	2,863	98	26	3	47	2	5,643
155	133	36	87	10		17					1,135
19		2		4		<1					105
22		1									98
2		1									49
2											24
										179	179
										140	140
200	113	40	87	14		17				319	1,730
1,365	613	66	370	72	2,863	115	26	3	47	321	23,636