



SOLID WASTE MANAGEMENT PLAN

Revision 2

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EXECUTIVE SUMMARY

Background

Revision 2 of the Capital Regional District's (CRD) Solid Waste Management Plan (SWMP) has been prepared at the request of the B.C. Ministry of the Environment, Lands and Parks (MELP), which requires that all regional districts submit a new or revised SWMP by December 31, 1995.

The revised SWMP outlines the system of services and programs both current status, termed Part 1, and planned future initiatives, termed The Plan (Part 2), which the CRD will use to:

- Achieve a 50% reduction in the amount of solid waste it landfills.
- Provide its residents with cost-effective solid waste management services, including residual disposal, in an environmentally sound manner.

Rationale for Revision 2

The CRD had its original SWMP approved by the MELP in January of 1989. The SWMP was subsequently revised in order to establish the CRD's 50% solid waste reduction goal and to confirm 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 of the Environment on January 14, 1993. In his letter, the Minister formally requested that the CRD again update its SWMP in to order to:

- Consider the enabling amendments to the Waste Management Act made through Bill 29
- Detail the closure of several smaller local area landfills
- Incorporate details of the waste diversion programs operating in several peripheral areas, such as the Gulf Islands
- Update the status of its solid waste diversion programs.

Revision 2 - Summary

The work requested by the Minister has been completed and is reflected in Revision 2 of the SWMP. The SWMP is primarily separated into two parts; Part 1 outlines the current status of existing operations and Part 2 outlines the planned future initiatives termed The Plan. The SWMP reaffirms the CRD's intent to continue with the numerous solid waste management programs already implemented to date. Planned new programs include the establishment of a solid waste burning policy, a stepped approach to recyclables management, a public private partnership for organic waste diversion, and commencement of filling Phase 2 of Hartland landfill. The issue of the use of the Highest Waste Recyclers facility is to be resolved by 30 April 1996.

Public Consultation

In view of the extensive public consultation that was conducted for the original SWMP and revision 1, MELP agreed that a relatively modest, well focused public involvement process (PIP) dealing with the major new issues would be most appropriate for revision 2. In accordance with this agreement, public feedback was solicited through a variety of methods including: stakeholder and First Nations meetings, discussions with local municipalities, circulation of a discussion paper, and placement of advertisements in local newspapers.

The PIP focused primarily on three issues:

- Landfill material restrictions
- Burning of solid wastes
- Regulating the storage of recyclable materials for environmental protection.

Revision 2 of the Solid Waste Management Plan contains the framework which will be used for the next five years to effectively manage the region's solid waste. The Plan contains the necessary programs to meet the provincially mandated goal of a 50% reduction in solid waste being landfilled.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this second revision of the Capital Regional District's (CRD) Solid Waste Management Plan (SWMP) is to review and update the status of the CRD's solid waste management and diversion programs, detail various landfill closures, and incorporate recent legislative changes made to the Waste Management Act through the Bill 29 amendment.

The SWMP is primarily separated into two parts. Part 1 outlines the current status which reviews the initiatives undertaken to date and Part 2 outlines the planned future initiatives, termed The Plan.

1.2 Background

The British Columbia Waste Management Act requires that regional districts undertake the responsibility for solid waste management within their boundaries. Under the act, all regional districts are required to submit to the province a new or revised solid waste management plan by December 31, 1995.

The original CRD SWMP was developed with extensive public involvement in 1986 and 1987. The plan was adopted by the CRD Board in November 1987, and received approval from the B.C. minister of environment on January 24, 1989. A copy of the minister's letter of approval is attached in Appendix A. The plan confirmed the development of Phase 2 of Hartland landfill, namely the expansion of the fill area into the Heal Lake basin, and established the regional solid waste reduction goals (through recycling and composting) of 10% by 1993 and 15% by 1998.

During implementation of the plan, the prospect of draining Heal Lake generated significant public concern. The CRD Board responded in August 1990 by retaining an independent commissioner to provide a review of the SWMP, with specific emphasis on re-examining: 1) the district's need to continue to dispose of solid waste through landfilling, 2) the alternatives to landfilling, and 3) alternate landfill sites.

The commissioner's report reaffirmed the CRD's need for a well designed and carefully operated landfill and concluded that, within the Capital Regional District, the Phase 2 area of Hartland landfill was the most appropriate site. The report also recommended that the Solid Waste Management Plan be revised to incorporate details of all reduction, reuse, recycling and recovery programs to be implemented and further recommended that the CRD apply to have the amended Solid Waste Management Plan approved under the Waste Management Act. On March 13, 1991, the CRD Board approved the report's recommendations and Revision 1 of the SWMP was initiated.

In July of 1991, Revision 1 of the SWMP was adopted by the CRD Board, and was subsequently approved by the B.C. minister of the environment, lands and parks in a letter dated January 14, 1993.

However, the minister's letter required that the CRD incorporate recent amendments to the Waste Management Act (Bill 29) as well as documentation of various landfill closures. This necessitated a second revision of the SWMP. A copy of the minister's letter of approval is attached in Appendix A.

1.3 Public Involvement Process

In view of the extensive public consultation conducted for both the original SWMP and its revision 1, the MELP agreed that a relatively modest, well focused public involvement process (PIP) pertaining to major new initiatives would be most appropriate for Revision 2.

The CRD sought input into the revision process from a number of sources. Feedback was formally requested from local municipal councils, solid waste industry stakeholders, the First Nations bands within the region, and the general public. Several groups who provide feedback to the CRD on an ongoing basis regarding solid waste issues and their input was also sought. These groups include the Prospect Lake Ratepayers Association, Engineers' Liaison committee, CRD Roundtable on the Environment, Municipal Recycling Coordinators, CRD sponsored solid waste industry committees, and more recently the CRD sponsored Regional Diversion council.

Detailed information regarding the PIP process and its results are provided in Appendix B.

PART 1 - CURRENT PROGRAMS

2.0 REDUCTION, REUSE, RECYCLING AND COMPOSTING PROGRAMS

Both the federal and B.C. provincial governments have adopted a 50 percent (per capita) solid waste reduction goal by the year 2000. Through the SWMP Revision 1, the CRD adopted a more aggressive goal, to reduce the quantity of solid waste it landfills per capita by 50% by 1995. Due to delays in the commencement of key diversion programs, the plan for Revision 2 of the SWMP is to achieve the provincial goal of 50% by the year 2000. However, with the CRD's aggressive diversion efforts, this goal may be achieved earlier.

The CRD's waste reduction goal is based on 1989 tonnages. In 1989, the annual per capita waste landfilled was 0.671 tonnes. When realized, the 50% reduction goal will see the annual per capita solid waste landfilled reduced to 0.366 tonnes. By the end of 1994, a reduction of 32.3% had been achieved. It is expected that diverting an additional 17.7% will be more difficult, as most of the readily divertible materials have already been removed from the solid waste stream. A chart outlining anticipated diversion rates up to the year 2000 is available for review in Appendix C.

To achieve its goal, the CRD will continue to use the waste management hierarchy of reduce, reuse and recycle (the 3Rs):

- 1) Reduction: producing less solid waste at the source.
- 2) Reuse: using goods and materials over again that might otherwise be discarded.
- 3) Recycling: the diversion of solid waste materials for use as feedstock in the production of new products.

2.1 CRD Source Reduction and Reuse Initiatives

The dynamic nature of waste diversion dictates that the methods used to divert materials from landfill are subject to change. The CRD may need to periodically add, delete or modify its 3Rs programs in order to realize its solid waste reduction goal. Listed below are the methods currently being employed in an effort to achieve waste reduction at source.

2.1.1 Residential User-Pay Garbage Collection

Beginning in January 1992, the four core municipalities within the CRD (Victoria, Oak Bay, Saanich, and Esquimalt) began a volume based residential user pay garbage collection program. Under this program, each household is only permitted the equivalent of one can (maximum 100 litres) of garbage per week for collection. The cost for this base level of service is included as part of the annual municipal tax levy, but is listed as a separate line item on tax notices in order to help make

residents more aware of the cost of solid waste disposal. To have additional garbage collected, residents must purchase and affix a "trash tag" to each of their extra cans or bags. The cost of the trash tags varies from \$1.50 to \$2.50, depending on the municipality. By the end of the first year of the program, the quantity of residential refuse collected from these four municipalities was reduced by 18% from levels of the previous year.

The remaining non-core municipalities and electoral areas of the CRD have always had some form of residential user pay garbage collection. Depending upon the area, residents either:

- 1) have a municipally contracted collection equivalent of one can per week (with additional garbage requiring trash tags);
- 2) pay for a private company to collect their garbage; or
- 3) transport their garbage to a transfer site or Hartland landfill themselves.

2.1.2 Grants for Registered Non-Profit Repair and Reuse Organizations

Since 1992, grants have been made available to three registered non-profit charitable organizations (Salvation Army, Goodwill Enterprises and St. Vincent de Paul Society) within the Capital Region. These organizations employ physically and mentally challenged residents in the repair, re-use and retailing of otherwise waste used goods. The CRD recognizes the important role these organizations play in reducing solid waste, and the purpose of the grants is to help offset the high cost of disposing of the significant quantity of garbage and unusable goods they annually receive along with the donated re-useable goods.

2.1.3 Re-Useable Goods Salvaging Area

In the interest of fostering reuse rather than disposal of used goods, a facility was opened at Hartland landfill in October 1992 to accept unwanted used goods from the public for reuse. Residents may drop-off a variety of goods free of charge including: small appliances, bicycles, clothing, toys, kitchen wares and computers. These goods are made available to the three registered non-profit charitable organizations who repair, refurbish and then re-sell (or donate to the needy) these reusable goods. In the first 18 months of operation, approximately 14 tonnes of reusable goods were diverted from landfilling through the salvaging area.

It is intended that the types of materials accepted through the salvaging area may eventually be broadened and that the program may be expanded to allow the general public to retrieve select goods not wanted by the three non-profit charitable organizations.

2.1.4 Green Bonus Program

The Green Bonus program was formed in 1995 with the purpose of recognizing companies or their individual employees who have implemented model waste reduction programs in their workplace. Winners are selected twice per year and those chosen receive an award plaque made from recycled glass in recognition of their achievement. An editorial reviewing the winners' success at reducing solid waste is printed in local newspapers and a framed copy of the article is also presented to the winners.

It is intended that highlighting the waste reduction achievements of selected employees and businesses will act as an incentive for other businesses to reduce their solid waste.

2.1.5 Solid Waste Diversion Council

The Solid Waste Diversion Council (SWDC) was formed in January 1995 with ten representatives from the business sector, one non-voting CRD director and one CRD staff person. The purpose of the SWDC is to:

- enable the non-residential sector to reduce the amount of waste sent to landfill
- assist the CRD in achieving its waste reduction goals
- serve as a channel for communications between the business community and the Solid Waste division and the CRD Environment committee

It is intended that this purpose will be achieved through:

- evaluating proposed recycling and waste reduction programs for the non-residential sector
- liaising with their respective associations and peers
- investigating new recycling and waste reduction ideas
- providing recommendations to the Environment committee on cost effective diversion and reduction programs and allocation of funds thereto.

2.1.6 Landfill Material Bans/Restrictions

Despite local reuse or recycling opportunities, Hartland landfill will often receive many types of recyclable materials for landfilling. In order to ensure that recyclable materials do not continue to be landfilled, the CRD maintains the policy that once viable recycling alternatives for a specific waste material have been identified, that material will be restricted from disposal at Hartland landfill.

Current Restrictions:

Presently, drywall, corrugated cardboard, large household metal appliances (white goods), light vehicle tires, directories (telephone and real estate), scrap metal, concrete, asphalt, clean soil and rubble have been prohibited from disposal at Hartland landfill. These bans have proven to be a cost effective method of diverting recyclables from landfill.

Future Restrictions:

Future restrictions on the disposal of various other types of recyclable solid waste are planned for Hartland landfill and possibly the Highwest Waste Recyclers Ltd. (Chew landfill) site, once viable alternatives to landfilling have been confirmed.

The following material types are under review for future landfill restrictions:

- organic yard and garden debris
- compostable food
- contaminated fibre products
- fine papers
- blue box materials (glass and metal food and beverage containers, old newspapers, mixed waste paper)
- recyclable clean wood waste

Enforcement of Restrictions:

Material restrictions are enforced at Hartland landfill by CRD bylaw enforcement staff who visually inspect incoming loads of solid waste. Bylaw enforcement staff may issue a fine of up to \$200 through the Municipal Ticketing Information (MTI) Bylaw against loads of solid waste found to contain restricted materials.

2.1.7 Landfill Disposal Charges

Users of Hartland landfill must pay a weight-based disposal (tipping) fee, when they deposit solid waste for landfilling. To provide an incentive to reduce the quantity of solid waste being brought to the landfill for disposal and to fund all solid waste reduction programs, landfill tipping fees have been increased significantly in recent years. The tipping fee for Municipal refuse for 1995 is \$75 per tonne. Historic tipping fees are shown in Appendix C.

2.1.8 Facilitate Industrial/Commercial/Institutional (ICI) Waste Audits

In order to facilitate a reduction in solid waste being disposed by the industrial, commercial and institutional (ICI) sector, the CRD has developed the following stepped approach to the use of waste audits.

- 1) Encourage businesses to voluntarily conduct their own waste audits and waste reduction plans.
- 2) If the CRD's waste reduction goals have not been achieved, then review the feasibility of implementing mandatory ICI waste audits and reduction plans in 1998.

2.2 CRD Recycling Programs

2.2.1 Residential Curbside Recycling

In March 1989, the CRD initiated a residential curbside blue box program to collect old newspapers, glass and metal food and beverage containers in the four core municipalities in the Capital Region (Oak Bay, Saanich, Victoria and Esquimalt). The program was expanded in 1990 to include the Western Communities, the Saanich Peninsula municipalities and Salt Spring Island.

In 1991, Salt Spring Island opted out of the CRD's curbside blue box program and instead are currently receiving recycling services (depot) from the Salt Spring Community Society under contract to the CRD.

In rural areas, where population densities are too low to warrant individual household collection, compartmentalized drop boxes have been placed at central locations to accept these materials for recycling. Areas with drop box service include the village of Port Renfrew and certain rural areas in Sooke, Langford, Metchosin, Colwood and Saanich. Salt Spring Island the Outer Gulf Islands are provided with recycling grants in lieu of this service.

In May 1995, the CRD added mixed paper to the blue box and drop box programs. Mixed paper includes: magazines, junk mail, telephone books, paper bags, envelopes, writing paper and cereal/laundry boxes.

In order to increase the quantity of materials diverted through residential curbside recycling, the CRD plans to continue to expand the number of material types collected.

Currently, over 80,000 single family dwellings have curbside recycling or drop box service, with a 75% participation rate. In 1994, over 11,000 tonnes of materials were diverted from landfill through the residential drop boxes and the blue box program.

2.2.2 Apartment Recyclables Collection

In order to provide residents living in apartments with the same opportunities to recycle as those receiving blue box service, the CRD also established a recyclables collection program for apartment buildings in 1989. Through the apartment recycling program, each building was provided with wheeled carts to collect recyclables. When the apartment recycling program was implemented, old newspapers, glass and metal food and beverage containers were collected from residents for recycling. In 1993, the program was expanded to include intermediate and long term care facilities. Approximately 30,000 apartment units are currently on the program.

Like the blue box and residential drop box program, the apartment recycling program was expanded in May 1995 to include the collection of mixed waste paper.

2.2.3 Municipal Recycling Depots

In an effort to increase solid waste diversion from the residential sector, a network of staffed recycling depots was established in February 1992 to accept an expanded range of residential recyclables not collected through the curbside collection program. Materials collected for recycling include corrugated cardboard, magazines, mixed paper (box board, catalogues, flyers, writing paper, computer paper, etc.) and HDPE and PET pourable plastic bottles.

Depots have been established in the works yards of the municipalities of Oak Bay, Saanich, Esquimalt and Colwood. In Victoria, Langford and Sooke, depots have been established cooperatively with private recycling firms. Through these private depots, residents may recycle a variety of other materials, such as scrap metals, in addition to those recycled through the CRD program.

In Central and North Saanich, where no suitable permanent depot locations could be found, a mobile style depot has been put in place. Under the mobile depot system, a recycling truck is brought to a specific site within the municipality for set periods of time twice per month to accept recyclables from the public. At the end of the collection day, the truck is removed from the site and the recyclables are taken away for processing. Materials accepted through the mobile depot are corrugated cardboard, mixed waste paper and HDPE and PET pourable plastic bottles.

2.2.4 Plaza Recycling Depots

In September 1992, a pilot plaza recyclables drop-off depot program was implemented to augment the municipal depot program. Operating in a manner similar to the Central and North Saanich mobile depots, a collection truck was brought at scheduled times at a shopping plaza three times per week to accept recyclables from residents. At the end of the collection period, the recyclables were transported to a processing facility. The four plaza depots were located at Tillicum Mall, Fairfield

Plaza, Broadmead Shopping Centre and Mariner Village Mall (Sidney) and accepted corrugated cardboard, mixed waste paper and HDPE and PET pourable plastic bottles for recycling.

With the addition of mixed waste paper to the blue box, drop box and apartment recycling programs in May 1995, the need for the plaza recycling depots was significantly diminished. As a result, the program was discontinued on July 1, 1995.

2.2.5 Hartland Landfill Multi-Material Bin Sort Area

In order to provide residents with the opportunity to recycle more material, a multi-material bin sort area was established at Hartland landfill in July 1992. The area accepts blue box materials (newspaper, mixed paper, glass food and beverage containers, metal cans), corrugated cardboard, HDPE and PET pourable plastic bottles, ferrous and non-ferrous scrap metals, white goods (large metal appliances), lead-acid batteries, propane tanks, light vehicle tires, used motor oil, used oil filters and drywall.

2.2.6 Salt Spring and Outer Gulf Island Recycling Depots

On Salt Spring, Pender, Saturna, Mayne and Galiano islands, recyclable materials are collected through non-profit community operated drop-off or mobile depots under contract to the CRD. These depots, which are primarily staffed with local volunteers, accept a variety of materials for recycling including newspaper, corrugated cardboard, magazines, mixed paper, glass and metal food and beverage containers and in some locations large metal appliances (white goods), tires, scrap metals and plastics. The type of materials collected varies from depot to depot.

2.2.7 Telephone Book Recycling Program

Each year, B.C. Tel produces tens of thousands of new telephone directories for use within the CRD. In order to prevent the old directories from being disposed, the CRD established an annual telephone book collection and recycling program in 1991. In the first year of the program, the old telephone books were collected through the blue box program, however this method of collection was not cost effective and the program was modified for the following year. With financial support from B.C. Tel, the CRD established a collection point for telephone books at Hartland landfill in 1992 and offered all non-profit organizations a credit of 10¢ for each book (minimum 100 books) brought to the collection centre. Organizations such as Scouts Canada responded by initiating comprehensive collection programs. Over 78,000 telephone books were recovered in the first year of the diversion credit program. For the collection period of December 1993 to May 1994, the credit per book was increased to 20¢ and over 125,000 books were recovered. It is expected that this program will continue on an annual basis despite the addition of mixed waste paper, which includes telephone books, to blue box collection.

2.3 Recyclable Material Diversion Credits

During a series of meetings in 1994, CRD staff met with waste generators, collectors and material processors to discuss the difficulty and cost of recycling certain commodities where the market price for the product was insufficient to cover the cost of collection and processing. All groups concluded that diversion credits, paid to recycling facilities for specific products, would be the best method of dealing with these difficulties.

2.3.1 Diversion Credits Based on Landfill Space Savings

Diversion credits will be based on the space savings value for each material based on the NPV (net present value) cost of operating the landfill, stated as a cost per cubic metre of available space, multiplied by the density of the material diverted from the landfill. The avoided space costs would vary from one type of material to another, based on its relative compacted density. This relationship is shown in Appendix D.

Appendix D also identifies a number of materials including difficult to recycle categories of plastics, glass and clean wood waste. Not identified, but also possible candidates for diversion credits, are such items as appliances, tires, propane tanks and many other specific items that are deemed hard to recycle.

2.3.2 Methodology

Due to the diversity of recyclable materials and how businesses (including non-profit organizations) chose to successfully manage them, a request for proposal (RFP) will be developed during the winter of 1995/1996. This RFP will provide industry the opportunity to outline their plans to recycle/recover various materials. Each proposal will be reviewed and, subject to Board approval, a diversion credit per material type will be established for each facility registered under the program.

2.3.3 Registration of Participating Facilities

Diversion credits will only be available to registered facilities meeting CRD requirements. For registration and approval, the applicant will be required to provide a detailed plan which must include the following:

- a) anticipated source and type of materials moving through the facility, both at the start and in the five-year planning horizon;
- b) one, two and three year forecasted volumes of material(s) eligible for a diversion credit;
- c) end use of the material;

- d) a financial plan, including anticipated revenues and identification of the level of diversion credit needed to make the facility financially viable; and
- e) that the facility and users of the facility comply with all federal and provincial laws and requirements, including WCB.

Other provisions of the application may include:

- f) an agreement that any residuals from the facility will be taken to Hartland landfill;
- g) a requirement for monthly reporting of diversion credit volumes received, processed and marketed;
- h) an agreement to provide audit access to the records supporting any claim for a diversion credit;
- D) proof that volumes claimed on the application have been marketed to an approved end user; and

A formal contract would be signed between the CRD and facility owner/operator.

In the future, the diversion credit program may be used to fund municipal recycling depots in lieu of providing direct CRD operational support.

2.4 CRD Composting Programs

2.4.1 Home Composter Distribution Program

In recognizing that home composting is one of the most effective means available to residents to reduce their solid waste, the CRD initiated a subsidized home composter distribution program in 1992. With financial support from the CRD and the MELP, a total of 15,000 home composters were sold to residents for \$25, inclusive of applicable taxes. In 1993, a further 4,700 home composters were distributed in the same manner, for a total of 19,700 units.

Because distribution levels had apparently reached the point of saturation after distribution in 1993, subsidized distribution was not continued in 1994. A comprehensive outreach program has been maintained to help ensure the proper use of the home composters and to guide others in making their own home composters. Demand for home composters is being monitored and distribution may be renewed in the future, if required.

It is estimated that each home composter will divert an average on 278 kg of solid waste per year.

2.4.2 Apartment Worm Composter Distribution

In order to provide residents living in apartments the opportunity to compost their organic waste, a subsidized 200 unit pilot distribution program was conducted in 1993 to determine the feasibility of, and resident interest in, using apartment worm composters.

A series of distribution days were scheduled in conjunction with worm composting education workshops through the spring and summer of 1993. With funding from the CRD and the B.C. MELP, complete worm composters were offered to residents (including the worms) for \$20.

Public interest in the worm composters proved limited and the program was concluded without plans to distribute additional units. However, worm composting continues to be promoted as part of normal waste reduction education activities and, when interested, residents are advised on where they may privately purchase worm composters, or are given information on how to construct their own worm composter.

2.4.3 School Worm Composter Program

In order to help schools within the region reduce their solid waste, the CRD provided schools with worm composters in 1993. The worm composters allow staff and students to compost their organic lunch wastes and serve as a valuable means of educating students about the need to reduce solid waste. Between 1993 and 1994, over 100 worm composters were distributed without charge to schools within the CRD. Worm composting will continue to be promoted in schools and interested classes will be advised on where they can purchase units.

2.4.4 Victoria Compost Education Centre

The Victoria Compost Education Centre (VCEC) is a community run non-profit project which is funded by the Federal Environment Partners Fund, the CRD and the City of Victoria. The centre opened on September 12, 1992 to provide the public with home composting workshops, composting education material and guidance on how to properly build and use home composters. The on site organic garden provides residents with a first hand look at a variety of home composters in use and also demonstrates the proper use and application of finished compost. The VCEC also provides the public with a compost hotline (386-WORM) to answer the public's composting questions and concerns.

2.4.5 Regional Organic Waste Composting Facility #1

On May 15, 1992, a 4.5 acre composting facility was opened at the Hartland site which accepts segregated loads of yard and garden wastes at a reduced tipping fee. The organic material is ground and composted in open air agitated windrows. Approximately 12,000 tonnes of material is composted each year and the finished compost is sold in bulk through public tender.

Subject to funding and Board approval, the CRD intends to enter into an agreement with a corporation under which a multi-bay in-vessel composting plant will be constructed and operated by the corporation at the Hartland site for a 20 year term beginning in 1996. The composting plant to be constructed would accept and compost an expanded range of organic wastes including wastes, food waste and biowaste producing compost for resale to the public. At the end of the term of the agreement the CRD will acquire the facility from the contractor.

As outlined in Appendix I, the CRD will mitigate the impact of odours, leachate, dust, vectors and noise produced from the operation of the in-vessel composting plant.

2.5 Other Non-CRD Sponsored 3Rs and Composting Programs

There are a number of non-CRD 3Rs and composting programs which contribute to solid waste diversion in the CRD. These include:

- federal diversion programs
- provincial diversion programs
- municipal diversion programs
- private business programs
- institutional programs
- community groups and volunteer run programs

3.0 EDUCATION PROGRAMS

The CRD Environmental Education group (EEG), formed in August 1991, provides support to ongoing waste reduction and recycling programs and solid waste initiatives by providing advertising, promotional and educational materials and coordinating marketing campaigns.

The EEG organizes and advertises special recycling events (Earth Week, Environment Week, Waste Reduction Month), assists the public with recycling and waste reduction information, and provides a hotline service to answer the public's concerns and queries. The hotline offers both automated and operator assisted information to callers and is available 24 hours a day. In 1994, the Hotline received 67,270 calls - an increase of 12% over 1993. Specific information is available through the EEG office on composting, curbside recycling, business/office waste reduction and recycling, safe alternatives to household hazardous waste, alternatives to packaging, recycling depot information and source control of hazardous waste is available to businesses, schools, interest groups as well as the general public. The EEG also produces the CRD Recycling Directory which lists recycling companies and recycling depots available throughout the region.

Together with a group of volunteer speakers, the EEG makes presentations to groups (over 10,000 people a year) and speaks to many more as individuals.

4.0 HOUSEHOLD HAZARDOUS WASTE (HHW) MANAGEMENT

4.1 Summary of HHW and Paint Collection To-date

In recognizing the need to keep household hazardous waste (HHW) out of the solid waste stream, the CRD has assisted with a number of HHW and paint collection programs. A summary of these events is provided below:

- 1991 BC Hazardous Waste Management Corporation (BCHWMC) monthly HHW collection at events Hartland landfill.
- 1993 Pilot Waste Paint Collection and Recycling event at Ellice Recycle was provided by the Canadian Paint and Coatings Association (CPCA) in cooperation with the CRD, the Ministry of Environment, Lands and Parks, Philip Environmental and Ellice Recycle. CRD coordinated an extensive promotion and advertising campaign and provided one third of the advertising costs.
- 1994 CRD supported the establishment of an industry funded and operated (IFO) HHW collection system as recommended by the Waste Reduction Commission (WRC). The IFO system is intended to start with the collection of paint and expand to other hazardous wastes.
- 1995 CRD authorized the B.C. Paint Care Association (BCPCA) to operate a temporary waste paint collection facility at Hartland two days each month for six months (to July 1995).
- 1995 CRD facilitated three additional collection events in both June and July at other sites in the region.
- 1995 CRD is currently setting up a pilot (for four to six months) with Hartland and six other sites in the region to receive paint on a regular basis.

If the pilot program is successful, it may form the basis of a permanent program starting in 1996.

5.0 BIOMEDICAL WASTE MANAGEMENT

In its study entitled *Shared Responsibilities - A.B.C. Biomedical Waste Action Plan*, the B.C. Waste Reduction Commission made 23 recommendations regarding the management of biomedical waste. Recommendation #13 states that autoclaved non-anatomical biomedical wastes should be disposed of as a municipal non-hazardous waste.

CRD Bylaw 2033 currently (June 1995) allows sterilized (autoclaved) non-anatomical biomedical waste from small quantity generators to be disposed at Hartland landfill as controlled waste at \$245 per tonne. As a result

of the waste commission's report and a financial analysis of landfill space savings, a study was undertaken related to health issues associated with landfilling biomedical waste.

Based on the results of that study, the following recommendations were approved by the Board in June 1995:

- 1) Treated non-anatomical biomedical waste could be safely disposed at Hartland as regular municipal waste;
- 2) Whole treated sharps¹ continue to be managed separately at the landfill as controlled waste at \$245 per tonne (1995 rates), unless this component can be physically altered to prevent punctures or cuts;
- 3) CRD develop an educational program for landfill workers on:
 - a) understanding how health care facilities sort and manage biomedical waste;
 - b) explanation of adopted Canadian Council of Ministers of Environment (CCME) definitions of biomedical waste;
 - c) conditions necessary for disease transmission and infectious agents of concern; and
 - d) safety practices for the landfill worker.
- 4) Redraft biomedical waste policies for landfill workers to reflect waste handling changes and evaluate immunization requirements in light of policy changes and the adopted sharps handling policy.

The Board approved a bylaw amendment in September 1995 to classify treated non-anatomical biomedical waste as standard refuse.

6.0 LANDFILL CLOSURES

Since the approval of the original Solid Waste Management Plan in January 1989, most of the smaller landfills identified in the plan have subsequently been closed for regulatory or environmental reasons. Listed below with a brief review are the landfills which have ceased operation. All available site closure plans are attached in Appendix E.

¹ Sharps are defined as clinical and laboratory materials consisting of needles, syringes, blades or laboratory glass.

6.1 Blackburn Road (Salt Spring Island) Landfill

The Blackburn Road landfill site is located on approximately 0.7 hectares of private land owned by Mr. N. Twa. The landfill began operation in 1966 under the MELP permit number PR-1839 and was ordered closed by the MELP on July 18, 1991 for environmental reasons.

Under the closure plan, the site ceased accepting solid waste after December 31, 1991. A final clay cover of a minimum 600 mm thickness was applied to the entire active disposal area and the site was re-vegetated with native grass to inhibit erosion. The Ministry of Environment, Lands and Parks maintains responsibility for the post-closure monitoring of the former landfill site.

Residents of Salt Spring Island now either self-haul or contract private firms to collect and haul their solid waste to Hartland landfill.

6.2 Galiano Island Landfill

The Galiano Island landfill is situated on approximately 0.3 hectares of land privately owned by MacMillan Bloedel Limited. The site began accepting solid waste in 1972, however, the MELP did not issue the site a pollution control permit (No. PR-5559) until October 1979. The landfill site was operated by the Galiano Club, a non-profit volunteer organization, under a signed agreement with MacMillan Bloedel Limited. On October 31, 1991, the agreement with MacMillan Bloedel expired and MacMillan Bloedel indicated that it was not interested in renewing the permit to allow for solid waste to continue to be disposed on its property. However, MacMillan Bloedel did offer to sell the site to the residents of the island for continued use as a landfill site. On October 19, 1991, residents by referendum rejected the proposal to purchase the land. The Galiano Club, being the permittee for the landfill operation, therefore directed that the site be closed on October 31, 1991 and requested that the MELP cancel its permit.

As a condition of closure, the Galiano Club was required to prepare and submit a closure plan. As part of the closure plan, the disposal site was graded to 2 to 3% slopes, a minimum 600 mm compacted clay final cover was applied, and the site was revegetated with indigenous grass to inhibit erosion. The Ministry of Environment, Lands and Parks maintains responsibility for other post-closure monitoring of the site.

Galiano Island residents currently transport their solid waste to Hartland landfill or contract private collection services to do so.

6.3 Saturna Island Landfill

The Saturna Island landfill site is located on approximately 0.2 hectares of land privately owned by Mr. J. Money. The site was operated by the Saturna Community Club for a number of years without

a permit, until June 14, 1973 when pollution control permit number PR-2083 was issued to the community club to operate the landfill.

In 1992, after being advised by the CRD of its intention to eventually consolidate solid waste landfilling at Hartland landfill, the community club directed that the site be closed after July 1, 1993. The community club requested that the MELP cancel the permit and a closure plan was prepared and submitted. The disposal site was graded, a final 600 mm clay cover was applied, and native grass was planted. Responsibility for monitoring the closed landfill site rests with the MELP.

Saturna Island residents now transport their solid waste directly to Hartland landfill or contract private collection services to do so.

6.4 Port Renfrew Landfill

Port Renfrew landfill is located on approximately 0.5 hectares of land privately owned by Fletcher Challenge Canada Ltd. Permit number PR-2321 to operate a landfill on the site was first issued to B.C. Forest Products Ltd. on January 22, 1974, authorizing them to discharge 27 cubic yards per day of domestic and industrial (wood) waste from the logging operation at Port Renfrew. In June 1988, the permit was revised to only authorize the disposal of domestic solid waste at a rate of 5.4 cubic metres per day from the community of Port Renfrew.

In October 1989, Fletcher Challenge, the permit holder for the site, requested that the permit be cancelled and the site permanently closed. The permittee developed a site rehabilitation and closure plan, which included grading the site to a 1:200 slope, capping with 0.9 metres of cover material and removing the site access road. The Ministry of Environment, Lands and Parks maintains responsibility for the environmental monitoring of the site.

In order to provide residents of Port Renfrew with a method of disposing of their solid waste, the CRD established a solid waste transfer station. Source separated recyclables are also accepted at the site for recycling.

7.0 JORDAN RIVER LANDFILL

Western Forest Products Ltd. (WFPL) currently holds permits to operate two separate solid waste landfills in the Jordan River area. Permit number PR-6965 was issued on September 28, 1984 to allow the disposal of up to 7,800 cubic metres per year of industrial wood waste and mineral soil originating from WFPL's dryland log sorting operation at Jordan River. The landfill is located on an approximately 2 hectare site adjacent to the Jordan River, which forms part of Parcel B, Lot 1, Section 9, Plan 13455 of the Renfrew District.

WFPL's second permit, PR-3788, was originally issued to Canadian Puget Sound Lumber and Timber Company Ltd. on May 23, 1975 to allow the disposal of up to 7.6 cubic metres per week of solid waste from

domestic, commercial and light industrial sources. However, on August 18, 1983, permit PR-3788 was amended, changing the name of the permittee from Canadian Puget Sound Lumber and Timber Company Ltd. to WFPL. Under the amended permit, the quantity of solid waste which could be disposed was reduced to 5 cubic metres per week and the type of solid waste was restricted to wood, bark, ash and aggregate waste from the WFPL dryland log sorting operation; no domestic refuse was allowed to be disposed.

Although permits PR-3788 and PR-6965 are still valid, WFPL is currently only actively utilizing the landfill authorized under permit PR-6965. The landfill authorized under permit PR-3788 is presently not active, however, WFPL may re-activate the site at its discretion, as long as the site permit is maintained.

The approximately 75 residents of the community of Jordan River presently dispose of their solid waste in large commercial scale waste containers which are serviced by a private waste management company and are paid for by WFPL.

This site is referenced only and does not form part of the Plan nor the region's solid waste management strategy.

8.0 HARTLAND LANDFILL OPERATION AND CAPITAL PLAN

8.1 General

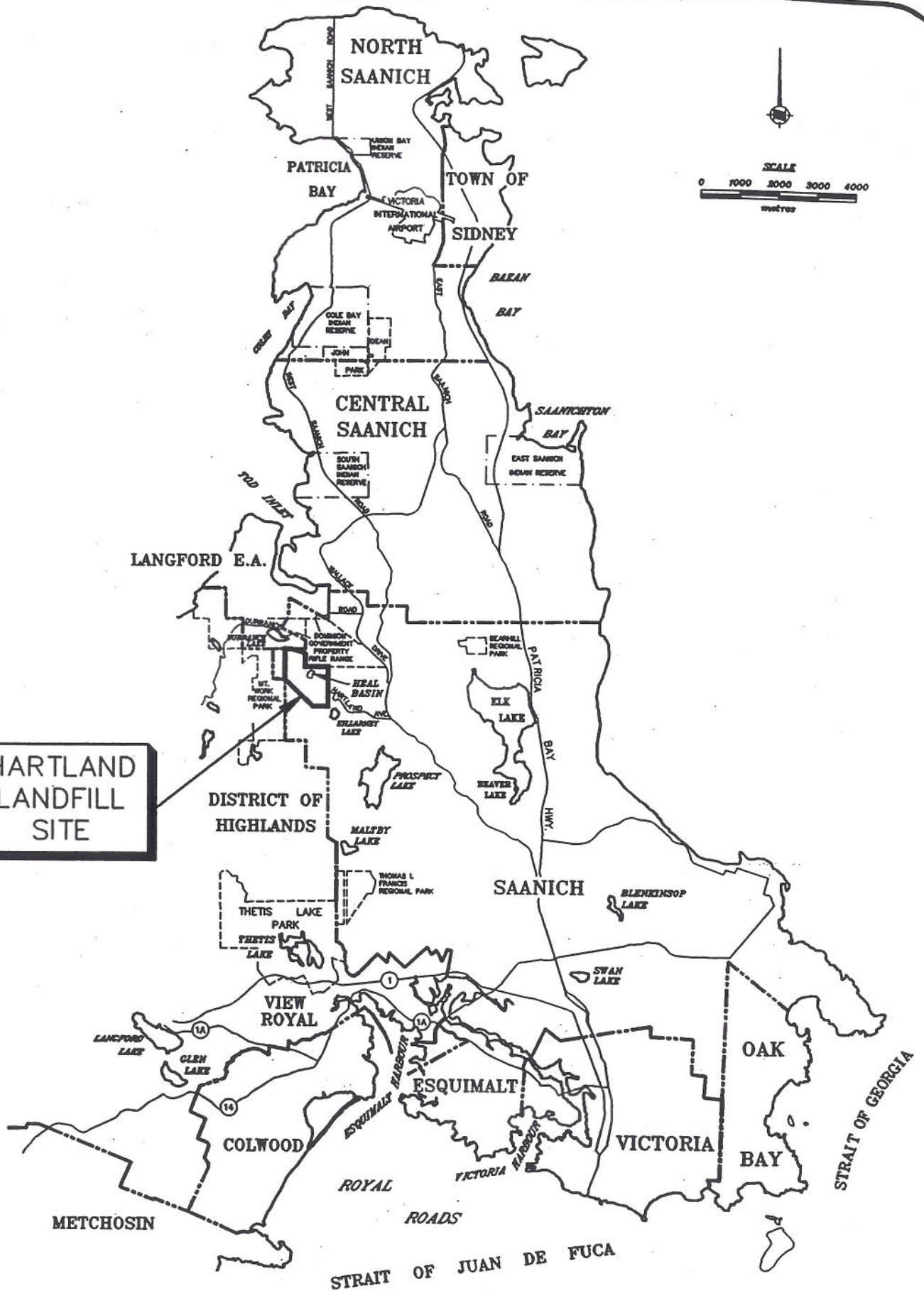
The CRD owns and operates Hartland landfill under MELP operational certificate number PR12659. The landfill is located on a 123.7 hectare site approximately 15 km northwest of downtown Victoria, in the bedrock highlands of the Gowland Range, as is shown on Figure 1. Figure 2 provides a more detailed view of the landfill site, including its legal boundaries. Hartland landfill was operated as a private disposal site from the early 1950's until it was purchased by the CRD in 1975. The former owner continued to operate the site under an informal agreement with the CRD until January 1985, when the CRD assumed the direct operation of the landfill. In March 1991, the preparation of Phase 2 of the Hartland landfill site commenced. The Phase 2 area will receive virtually all of the CRD's solid waste for approximately the next 50 years, starting in 1996.

With the exception of all statutory holidays, Hartland landfill is open to the public from 7:00 a.m. to 5:00 p.m. Monday through Friday, and from 7:00 a.m. to 2:00 p.m. on Saturday.

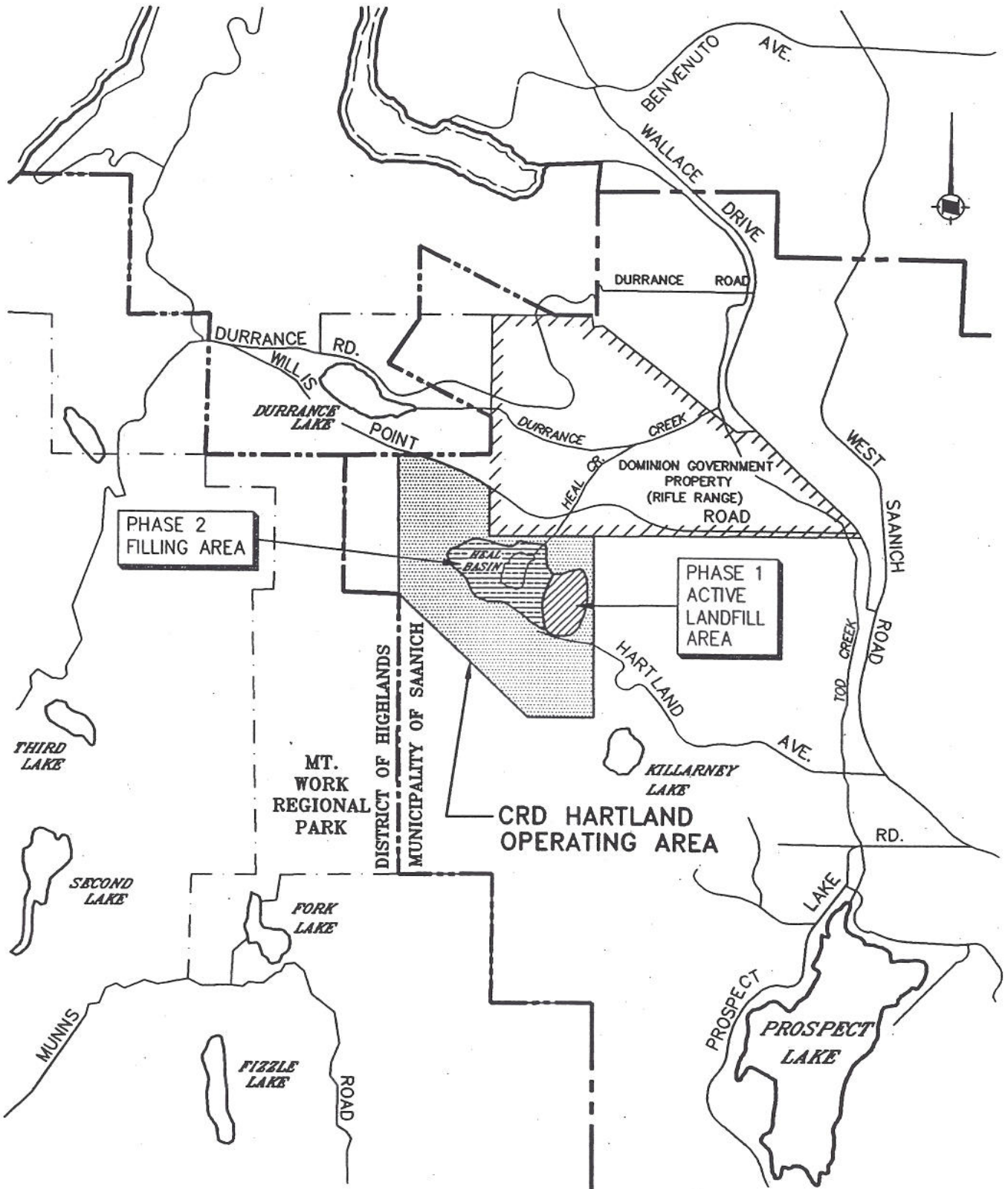
8.2 Operating Plan

The Hartland landfill operating plan defines the procedures and requirements for the operation of the landfill site. A copy of the operating plan table of contents is provided in Appendix F.

HARTLAND
LANDFILL
SITE



KEY PLAN – SOLID WASTE MANAGEMENT PLAN



LOCATION PLAN
SOLID WASTE MANAGEMENT PLAN
PHASE 1 AND PHASE 2

8.3 Accepted Wastes

Hartland landfill accepts municipal solid waste from residential, industrial, commercial and institutional sources from the Capital Region. Hogfuel, soil (for landfill cover), stumps and various controlled wastes, including asbestos and sewage screenings, are also accepted. Source separated yard and garden waste is also accepted at a reduced tipping fee for composting at the Hartland composting facility. A variety of source separated recyclables are also accepted without charge at the Hartland recycling area.

Due to environmental and safety concerns, a number of waste types are prohibited from disposal at Hartland landfill, or are accepted only as controlled wastes under special conditions. The following materials are accepted as controlled wastes:

- water containing soil, sand, gravel, other non-hazardous solids, sewage solids, trace levels of petroleum products and/or grease
- screenings from municipal sewage treatment plants and pump stations
- waste sludge from municipal sewage treatment plants and pump stations
- condemned foods
- waste asbestos

Under CRD Bylaw, the following wastes are prohibited from disposal:

- liquids, except as permitted
- ignitable waste
- reactive waste
- motor vehicle bodies
- special waste, excluding waste asbestos
- refuse that is on fire or smouldering
- biomedical waste (except sterilized biomedical waste as permitted by CRD Bylaw 1955)
- cytotoxic waste

Restricted wastes are listed in Section 2.1.6.

CRD Bylaw 2338, January 1, 1996 details controlled, prohibited and restricted wastes and has been attached for information in Appendix G. Landfill staff will refuse any other material which the CRD deems unacceptable.

8.4 Hartland Landfill Capital Development Plan

In order to provide its residents with the most environmentally safe and economically efficient landfill possible, the CRD is committed to a series of capital improvements to the site. It is estimated that these planned capital projects will cost approximately \$28,000,000 (see Appendix H). The capital projects planned for Hartland landfill are listed below.

8.4.1 Closure of the Phase 1 Area

It is expected that Phase 1 will reach capacity by the spring of 1996. Once filled, this area must be closed and permanently capped with an impervious cover with adequate grading.

8.4.2 Preparation of Phase 2 Area

Prior to filling Phase 2, site preparations such as construction of a landfill underdrain system and the development of a surface run off management system must be completed.

8.4.3 Relocation of Composting Activities

Based on the results of a comprehensive siting and traffic study of the Hartland landfill, all composting activities, including the proposed in-vessel food waste facility, will be moved to the north site, with access via Willis Point Road. This will require further site clearing, grading and access development.

The CRD will mitigate odours, leachate, dust, vectors and noise produced from the operation of the in-vessel composting plant as outlined in Appendix I.

In order to minimize the impact from traffic accessing the composting area, a traffic abatement program will be initiated in cooperation with local municipalities, the province, industry and local community organizations to address:

- developing standards for vehicles accessing the site
- developing traffic agreements with major users of the site
- hours of operation
- a left hand turn lane off of Willis Point Road into the site
- vehicles entering the site to prevent tarping just prior to entry
- vehicle line-ups prior to the daily commencement of operation
- debris clean up along access routes to the site
- liquid discharges from vehicles on route to the site
- developing a communications system to monitor vehicles accessing the site
- developing penalties for vehicles not complying with set standards.

Further to local community feedback, a study will be conducted related to safety and vehicle movement, its impact along Willis Point Road and the access to the facility including its location and design standards. Terms of reference for this study will be developed in consultation with the Willis Point and Prospect Lake Community Associations. Subject to Board approval, the CRD will undertake any reasonable recommendations resulting from the study, including a left hand turn lane off of Willis Point Road.

A leachate management strategy will be developed for the yard and garden waste windrow composting operation to meet provincial guidelines.

Further consultation with the Willis Point and Prospect Lake Community Associations will be conducted during the development of the composting activities at the north of the site, including the development of the traffic abatement program, vehicle safety and movement and its impact on Willis Point.

8.4.4 Leachate Collection and Management System

A leachate management system must be constructed for the Phase 2 area and improvements to the existing Phase 1 leachate collection system, particularly at the south end, are also required. An increase in the leachate discharge pipeline from 25 to 40 litres per second may also be necessary.

8.4.5 Landfill Gas Collection System

Decomposition of solid waste in the landfill produces landfill gas (primarily methane and CO₂) which must be managed. To complete the closure of Phase 1, it will be necessary to upgrade the existing gas collection system. The work will include the design and construction of gas wells, piping, a gas flaring facility, as well as a series of gas monitoring probes along the east perimeter of the Phase 1 area. The gas collection system may also be modified in the future to allow for energy recovery from the flaring process or to sell the gas commercially.

8.4.6 Various Other Facility Upgrades

In order to optimize the efficiency of the Hartland site, it will be necessary to improve many of the site's facilities. This includes redesigning the bin sort area to improve traffic flow and to facilitate more recycling and establishing a household hazardous waste collection facility primarily to receive paint in the first instance, upgrading the existing administrative buildings, modifying the small vehicle unloading or "bin" area to relieve traffic congestion, as well as other general site improvements.

8.4.7 Mitigation for Loss of Heal Lake

To mitigate for the loss of Heal Lake, due to the expansion of the landfill area into the Heal basin, the CRD committed to public use land which is surplus to the needs of the landfill operation. In May 1994 the CRD Board approved the transfer of 196.28 hectares of land to CRD Regional Parks to use as public park area and the transfer of \$300,860 to develop the surplus lands for use as park area.

8.4.8 Annexation of Hartland Landfill Property

In February 1992, Hartland landfill was located in the Langford electoral area. At that time, the Prospect Lake Community Association and the CRD requested Saanich council incorporate Hartland landfill area into the Corporation of the District of Saanich. Saanich council subsequently endorsed this proposal for the annexation of all of the Hartland landfill site and surplus lands. The CRD Board subsequently endorsed the annexation of the site at the meeting of October 1993, as annexation would:

- 1) bring the provision of services such as roads and fire under one jurisdiction, and
- 2) allow Saanich to better address the concerns of local Saanich residents who are most impacted by the landfill.

By Order in Council Number 1475 and by a Supplementary Letters Patent, the Ministry of Municipal Affairs granted the boundary extension to the Corporation of the District of Saanich to include the area of Hartland landfill, effective December 31, 1994.

8.4.9 Hartland Landfill Quarry Development Plan - Outline

A commercial quarrying operation is proposed at the Hartland landfill site. Developing a quarrying operation at Hartland will provide the CRD with:

- an estimated 1.2 million m³ of additional landfill capacity (extending the life of the landfill by 10 - 12 years);
- sufficient aggregate to meet on-site construction and site operating needs at minimal cost; and
- saleable surplus gravel to offset quarrying operational costs.

In addition, the quarry will help facilitate other improvements to the landfill operation including:

- long term access to the Phase 2 footprint;
- improved interception of shallow groundwater inflow at the base of the quarry walls and road cuts, effectively reducing leachate production; and

- potential grade control improvements to the leachate underdrain system which would be constructed on the quarry floor.

The quarry will be established on the west side of Heal Basin, within the treed gully that extends northwest from the middle of Heal Basin. A detailed geotechnical impact design will be prepared to ensure the optimization of the operation and minimize impact on the environment and neighbouring properties and residents.

The quarrying operation may produce some adverse impacts which include:

- increased vehicle traffic
- dust
- contaminated run-off
- danger area for hikers (explosives/cliffs)
- noise
- blasting vibrations
- visual impacts

Every practical effort will be made by the CRD to mitigate these and other impacts. A dust suppression program will be established, as will noise buffers and vegetation screens. Traffic to and from the quarrying operation will be via Willis Point Road. The contractor engaged for the quarrying operation will be required to limit truck traffic to and from the site. The use of "Jake" brakes will not be allowed and all trucks will be required to ensure that a quiet and respectful trucking operation is maintained. Infractions or violations of this policy will result in penalties being applied to the quarrying contractor.

A full quarry development plan, including environmental impact assessment, will be completed by the spring of 1997 and will be used as the basis for the implementation of the quarrying operation.

8.4.10 Capital Development Costs

Figure 3 summarizes the anticipated expenditures necessary to complete the capital developments for Hartland landfill:

FIGURE 3

PROJECT	ESTIMATED TOTAL COST (1991 - 1999)
Phase 1 Closure	\$10,040,521
Phase 2 Area Preparation	\$7,459,256
Composting Facilities Development	\$1,477,848
Leachate Management System	\$4,320,329
Gas Management System	\$2,342,229
Heal Lake Mitigation Funds	\$301,860
Miscellaneous Other Projects	\$2,206,000
Gravel Quarrying Operation	\$0
TOTAL	\$27,846,183

8.4.11 Development Plan - Site Utilization

Development and landfilling of the Phase 2 area will enable the District to maintain landfilling operations for an extended time period. Ultimate utilization of the site is projected to include:

- landfilling and processing of solid waste, special waste, liquid waste and controlled waste
- organic, yard and garden, and biowaste composting facility
- administration and weigh scale facilities
- landfill monitoring facilities
- bin sort area for recyclables
- white goods recovery
- storage facilities, both for on site operations and for temporary collection and storage of hazardous waste materials
- leachate handling, treatment and disposal
- landfill gas collection, processing, conversion, utilization, and sale
- rock quarrying, processing plant and sales facilities
- waste exchanges and salvaging operations
- landfill mining and reclamation
- recreation uses (following Phase 1 completion)

- retail and wholesale sales of composted materials, materials from the quarry operation, recycled or recovered materials and energy in the form of electricity, methanol, compressed natural gas or other recovered fuel
- application and evaluation of new and innovative waste disposal or reduction technology
- other solid waste disposal and reduction initiatives as approved by the Board

In June 1994 the CRD Board passed a resolution "that the CRD will not construct and operate a materials recovery facility (MRF) for the purpose of processing and marketing recyclables in anticipation of the private sector meeting this demand".

Further details of these projects and others are outlined in Hartland Landfill - Capital Works Development Plan.

8.5 Phase 1 Closure Plan

Phase 1 area of Hartland landfill is expected to be filled by the spring/summer of 1996. To facilitate the closure of this area, a consultant has been contracted to prepare a closure plan for the Phase 1 area. The closure plan addresses final cover, ground and surface water management, leachate treatment, erosion and settlement monitoring, as well as other closure details. A copy of the executive summary of the closure plan is shown in Appendix J.

9.0 HIGHWEST WASTE RECYCLERS LTD. LANDFILL SITE PLAN

Formerly known as the Chew landfill, this site is located on a 22.8 hectare site on Millstream Road in the District of Highlands. The site operates under MELP, Waste Management Permit No. PR05280 as a selected waste landfill and is allowed to burn or landfill inert municipal, demolition and land clearing debris and ash residue from the controlled burning of land clearing and demolition waste.

The permit allows up to 9,000 tonnes of land clearing and demolition waste to be burned per year and allows up to 22,500 tonnes of wastes to be landfilled per year, including the burn residuals.

Under the current operation, loads of waste are sorted to remove metals, tires and plastics which are recycled. The remaining construction and demolition wood wastes are burned in a refractory pit burner. This is a controlled burn which produces a minimal amount of smoke and particulate. Ash produced by the combustion is subsequently landfilled. Land clearing debris and clean waste wood is shredded on site and composted or used as hog fuel. Small quantities of low level hydrocarbon contaminated soils which are not considered special waste are also accepted on site for remediation.

The total site capacity is estimated to be 318,000 m³. Based on the existing consumption rate the projected site life is estimated to be about 38 years. A closure fund will be established in trust by the HWRL site owners to cover the full cost of closing the site once its capacity is realized.

Based on discussions with HWRL's owners and the MELP, it is recommended that refractory pit burning be reviewed along with the next SWMP review in approximately five years. During this time period, efforts will be made to develop alternative management methods and end uses for these materials.

Specific information related to capital and operating procedures are outlined in the Highwest Waste Recyclers Ltd. Design and Operating Plan. The table of contents of this document is attached in Appendix K.

Once the SWMP Revision 2 is approved by the Minister of Environment, Lands and Parks, it is intended that the landfill material restrictions in effect at the Hartland landfill will be applied to the HWRL site and enforced, if necessary, by CRD bylaw enforcement staff. Subject to CRD Board approval, an air quality monitoring program will also be implemented in conjunction with the MELP to measure particulate matter and other emissions emanating from the site. HWRL has agreed in principle to pay the cost of the monitoring program with a suggested limit of \$5,000 per year.

The HWRL facility shall comply with all federal, provincial and municipal regulations pertaining to the site. In particular, the site shall comply with local land use bylaws and other municipal regulations as determined by the District of Highlands.

PART 2 - THE PLAN

10.0 CONTINUATION OF CURRENT SOLID WASTE MANAGEMENT PROGRAMS

10.1 The Plan

It is the objective of the CRD to achieve the provincially mandated goal of a 50% reduction in the quantity of solid waste being landfilled by the year 2000, based on 1989 per capita landfilling rates.

Unless otherwise stated, the Plan is to continue with the various solid waste diversion programs listed under the Current Programs section including work projected for Hartland landfill to achieve this goal. It may be periodically necessary to add, delete, or modify programs in order to ensure that the region's solid waste management plan and reduction goals are achieved in an efficient manner. It is envisioned that the Plan will be used for a five year period, after which time it may be reviewed and modified where necessary.

The following list outlines the CRD's intentions regarding its existing solid waste diversion programs and landfill operations.

10.1.1 Residential User Pay Garbage Collection

The plan is to continue with user pay based garbage collection.

10.1.2 Grants for Registered Non-Profit Repair and Reuse Organizations

The plan is to continue to provide grants to these organizations.

10.1.3 Reusable Goods Salvaging Area

The plan is to continue to operate the reusable goods drop-off area at the Hartland landfill. The types of materials accepted may be broadened and the general public may eventually be allowed to retrieve select goods not wanted by the charitable organizations.

10.1.4 Green Bonus Program

The plan is to continue with this initiative.

10.1.5 Solid Waste Diversion Council

The plan is to continue with the Diversion Council.

10.1.6 Landfill Material Bans/ Restrictions

The plan is to maintain the policy that once viable alternatives to disposal have been identified for a specific material, that material will be restricted from disposal at Hartland landfill and the Highest Waste Recyclers site.

10.1.7 Landfill Disposal Charges

The plan is to maintain tipping fees at Hartland for disposal of waste at current levels for approximately three years (tipping fees at Hartland landfill for general refuse are currently \$75 per tonne) and thereafter to adjust fees as required by programs in the future.

10.1.8 Residential Curbside Recycling

The plan is to continue providing curbside recycling services and to add new materials to the collection program when feasible. In rural areas where population densities are too low to warrant individual household collection, the Plan is to continue to provide centralized drop box service to receive recyclables.

10.1.9 Apartment Recyclables Collection

The plan is to continue to provide apartment recycling services and add new materials to the collection program when feasible.

10.1.10 Municipal Recycling Depots

The plan is to continue to provide recycling depot service at the established locations. One option being considered for the future involves relinquishing responsibility for the depots to local municipalities and providing diversion credits to the municipalities for materials collected and recycled. This option would be discretionary.

10.1.11 Plaza Recycling Depots

The plaza recycling depots have been discontinued and the plan is not to renew the program.

10.1.12 Hartland Multi-Material Bin Sort Area

The plan is to continue to provide a bin sort area for recyclables services at Hartland and to collect new materials when feasible.

10.1.13 Salt Spring Island and Outer Gulf Island Recycling Depots

The plan is to continue to provide operating grants to these facilities.

10.1.14 Telephone Book Recycling Program

The plan is to continue the program on an annual basis.

10.1.15 Recyclable Material Diversion Credits

The plan is to develop the diversion credit program in 1995/1996 and continue to monitor and adjust credits where necessary.

10.1.16 Home Composter Distribution Program

The plan is to monitor residential demand for home composters and initiate distribution of additional home composters when required.

10.1.17 Apartment Worm Composter Distribution

The pilot worm composter distribution program is concluded and the plan is not to renew the program.

10.1.18 School Worm Composter Program

The plan is to continue to be promote worm composting in schools and advise interested schools on where they may purchase units.

10.1.19 Victoria Compost Education Centre

The plan is to continue to provide funding for the composting education centre.

10.1.20 Regional Organic Waste Composting Facility #1

- a) The plan is to move the composting operation to the north side of the Hartland site with access from Willis Point Road. Subject to funding and Board approval, the CRD intends to enter into an agreement with a corporation under which a multi-bay in-vessel composting plant will be constructed and operated by the corporation at the Hartland site for a 20 year term beginning in 1996. The composting plant to be constructed would accept and compost an expanded range of organic wastes including wastes, food waste and biowaste producing compost for resale to the public and commercial enterprise. At the end of the term of the agreement, the CRD

will acquire the facility from the contractor. Finished compost will be marketed from the site.

The CRD will mitigate the impact of odours, leachate, dust, vectors and noise produced from the operation of the in-vessel composting plant as outlined in Appendix I.

In order to minimize the impact from traffic accessing the composting area, a traffic abatement program will be initiated in cooperation with local municipalities, the province, industry and community organizations to address:

- developing standards for vehicles accessing the site
- developing traffic agreements with major users of the site
- hours of operation
- a left hand turn lane off of Willis Point Road into the site
- vehicles entering the site to prevent tarping just prior entry
- vehicle line-ups prior to the daily commencement of operation
- debris clean up along access routes to the site
- liquid discharges from vehicles on route to the site
- developing a communications system to monitor vehicles accessing the site
- developing penalties for vehicles not complying with set standards.

Further to local community feedback a study will be conducted related to: safety and vehicle movement and its impact along Willis Point Road and access to the facility including its location and design standards. Terms of reference for this study will be developed in consultation with the Willis Point and Prospect Lake Community Associations. Subject to Board approval, the CRD will undertake any reasonable recommendations resulting from the study, including a left hand turn lane off of Willis Point Road.

A leachate management strategy will be developed for the yard and garden waste windrow composting operation to meet provincial guidelines.

Further consultation with the Willis Point and Prospect Lake Community Associations will be conducted during the development of the composting activities at the north of the site, including the development of the traffic abatement program, vehicle safety and movement and its impact on Willis Point.

- b) The Plan is to name the composting facility the Regional Composting Facility #1.

10.1.21 Landfill Gas

The plan is to upgrade the existing gas collection system including the design and construction of gas wells, piping, a gas flaring facility, as well as a series of gas monitoring probes along the east perimeter of the Phase 1 area. The gas collection system may be modified to allow for energy recovery and the sale of the gas commercially from the site.

10.1.22 Commercial Quarrying Operation

The plan is to establish on site a quarrying operation to provide aggregate to meet the needs of the Hartland landfill and to sell surplus gravel commercially from the site to off-set operational costs of conducting the operation.

The quarry will be established on the west side of Heal Basin, within the treed gully that extends northwest from the middle of Heal Basin. A detailed geotechnical impact design will be prepared to ensure the optimization of the operation and minimize impact on the environment and neighbouring properties and residents.

The quarrying operation may produce some adverse impacts which include:

- increased vehicle traffic
- dust
- contaminated run-off
- danger area for hikers (explosives/cliffs)
- noise
- blasting vibrations
- visual impacts

Every practical effort will be made by the CRD to mitigate these and other impacts. A dust suppression program will be established, as will noise buffers and vegetation screens. Traffic to and from the quarrying operation will be via Willis Point Road. The contractor engaged for the quarrying operation will be required to limit traffic to and from the site. The use of "Jake" brakes will not be allowed and all trucks will be required to ensure that a quiet and respectful trucking operation is maintained. Infractions or violations of this policy will result in penalties being applied to the quarrying contractor.

A full quarry development plan, including environmental impact assessment, will be completed by the spring of 1997 and will be submitted to the Corporation of the District of Saanich for consideration prior to implementing the quarrying operation.

10.1.23 Septage and Sludge Disposal

The plan is to continue to accept screenings and waste sludge from sewage treatment plants and pump stations as controlled wastes for disposal at Hartland landfill.

10.1.24 Education Programs

The plan is to maintain and continue the environmental education programs.

10.1.25 Household Hazardous Waste Management

a) **Paint Stewardship Program**

With full funding from the B.C. Paint Care Association, the plan is to develop a permanent depot system within the region where residents have convenient drop-off locations and times.

b) **Other Hazardous Wastes**

The plan is to work with the industry and the provincial Waste Reduction Commissioner to provide safe disposal of other hazardous wastes including batteries, pesticides, herbicides, reactives, and corrosives. Drop-off locations and times must be convenient to residents. It is expected that the program will be fully funded by industry.

10.1.26 Biomedical Waste Management

The plan is to continue to accept treated non-anatomical biomedical waste, excluding sharps, for disposal as regular refuse. Sharps will continue to be managed separately as controlled waste.

10.1.27 Hartland Landfill Operation

The plan is to close phase 1 and open phase 2 in accordance with the filling, capital development and operational plans for the site. The site will be utilized for a number of other functions such as recycling, composting, administration, rock quarrying, and household hazardous waste collection and storage, as specified in the operational and capital development plans for the site and listed under section 8.4.11 of this document.

10.1.28 Highwest Waste Recyclers Site

Background

The District of Highlands is opposed to the continued use of this site for solid waste management purposes, and has asked that the CRD delete all reference to the site from the SWMP or that a reference to phase out and close the site be included.

However, the loss of this site as a solid waste management facility will have the following impacts:

- up to 22,500 tonnes per year more solid waste would likely be disposed at Hartland landfill;
- the loss of landfill space savings would be potentially \$9.7 million if the planned full capacity of the HWRL site is considered;
- the life of Hartland landfill would be shortened by an estimated five years;
- traffic to and from Hartland landfill would be increased;
- the opportunity to remediate hydrocarbon contaminated soils would be lost and the soils may then have to be landfilled at Hartland; and
- the opportunity to reuse or recycle selected materials from the construction and demolition waste stream prior to disposal would be lost.

The Plan

The plan is that the Highwest Waste Recyclers Ltd. issue be resolved by 30 April 1996.

10.1.29 Disposal of Solid Waste at Other Sites

The Plan is not to permit the disposal of solid waste at any site within the CRD other than at the Hartland landfill and the other locations listed within this document.

11.0 BURNING OF SOLID WASTES

11.1 Land Clearing Debris

11.1.1 Background

The Waste Management Act was amended in 1992 and now requires that authorization be obtained from the MELP to burn land clearing debris, except for volumes under 10 m³ per hectare per month. The Open Burning Smoke Control Regulation was enacted in April 1993, and the Open Burning Smoke Control Code of Practice was issued on March 1, 1994. These documents require that on site burning comply with the conditions specified in the smoke control legislation. If on site burning restrictions cannot be met, grinding or removal to an off site facility may be employed.

A municipal or regional district bylaws controlling open burning may supersede the smoke control regulation if the bylaw is found to be more restrictive.

From discussions with stakeholders, directors, fire chiefs, Island Trust officials and others within the Electoral Areas, the following outline was agreed:

- ban uncontrolled burning of land clearing debris
- register receiving centres for land clearing debris (under Permit by MELP)

- allow air curtain burning at these facilities for the next three to five years.

The Plan outlines the detail of this strategy.

11.1.2 The Plan - Land Clearing Debris - Electoral Areas

- a) the establishment of several land clearing debris receiving centres in the electoral areas of Sooke and Langford, one on Salt Spring Island and, if possible, one on each of the Outer Gulf Islands. The purpose of these receiving centres would be to safely store and accumulate land clearing wastes (not demolition and construction waste) and yard debris to allow the material to dry out before disposal.
- b) the MELP would issue operational certificates to the receiving centres to allow the controlled burning of the dried land clearing wastes with an air curtain burner only. The CRD would provide input into the operating requirements for these facilities and would solicit input from local area officials.
- c) local area officials would have the authority to inspect the receiving centres at any time and would have the authority to specify operating conditions for the site.
- d) burning of land clearing debris within the electoral areas should be restricted to within the boundaries of the receiving centres.
- e) material should be chipped and/or composted rather than burned. This burning policy will be reviewed in 1998 with the goal of a total burning ban by the year 2000.

11.1.3 Land Clearing Debris - Member Municipalities

Several municipalities with developable land have expressed interest in developing a strategy similar to that being proposed for the electoral areas for land clearing debris within their municipalities. Pending further discussions and agreement, an addendum to this plan may be issued to include municipalities regarding receiving centres.

11.2 Yard Waste

11.2.1 Background

Recent medical studies have shown that fine particulate matter in smoke, generated by incomplete combustion, contributes significantly to the degradation of human health, particularly in very young and elderly people. The fine particulate matter penetrates deep into the lungs and can cause severe health problems.

The generation of particulate matter can be reduced significantly by increasing the efficiency of the burn and by increasing the retention time the particulate spends in the heat.

No particulate matter is generated by composting.

Following discussions with Electoral Area stakeholders, it was concluded that when receiving centres and land clearing burning bans are in place, open burning of all yard waste could be banned. An education program should also be implemented prior to this.

11.2.2 The Plan - Yard Waste - Electoral Areas Only

- a) once receiving centres for land clearing debris are established, at convenient locations, open burning of all yard waste could be banned within the electoral areas other than at registered receiving centres.
- b) the CRD, MELP, fire chiefs and other agencies work cooperatively to develop an education program to ensure the public understands the health and safety problems associated with backyard burning and wood stove fires. Especially important is the need to emphasize the impact of burning other materials such as plastics.

11.3 Exemption

It is not intended that these burning restrictions will apply to community burning events, such as annual celebratory bonfires.

Land included under the provincial agricultural land reserve inventory would not be subject to this initiative.

11.4 Demolition and Construction Wood Debris

11.4.1 Background

The regulations mentioned in Section 11.1.1 also prohibit open burning of construction and demolition debris. The Highwest Waste Recyclers Ltd. (HWRL) landfill site, formerly known as the Chew landfill facility, on Millstream Road is the only permitted facility within the CRD allowed to burn demolition and construction wood debris. The most recent burning permit issued by the MELP permits the burning of debris only through the use of a controlled air curtain burner. No waste shall be burned which is not acceptable to the MELP Regional Manager. The permit also requires the sorting of clean wood debris where possible for reuse or grinding for compost.

The HWRL facility shall comply with all federal, provincial and municipal regulations pertaining to the site. In particular, the site shall comply with local land use bylaws and other municipal regulations as determined by the District of Highlands.

11.4.2 The Plan - Demolition and Construction Wood Debris

That no burning of demolition and construction waste be allowed, except at the HWRL facility. This will be reviewed along with the next SWMP revision in approximately five years. At that time, alternative management methods and end uses for these materials should be established.

11.5 Air Quality Monitoring

11.5.1 Background

In order to ensure that the HWRL facility, established receiving centres and other sites are burning within acceptable parameters, the CRD may purchase a mobile air quality monitoring station. The air quality monitoring station would be used primarily to measure particulate matter levels emanating from these and other sites.

11.5.2 The Plan

Subject to Board approval, the CRD may purchase an air monitoring device and develop an air management program in concert with the MELP, member municipalities and institutions.

12.0 RECYCLABLES MANAGEMENT - STEPPED APPROACH

12.1 The Problem

Although the vast majority of recycling businesses are reputable and environmentally responsible, occasionally a company enters into the recycling business, accepts hard to recycle waste for a fee, and stockpiles large amounts of the material. After collecting fees and stockpiling recyclables, these companies sometimes become insolvent or disappear, leaving behind stockpiled recyclables which then become an environmental problem. In some cases, recyclable waste is stockpiled in an unsafe manner and presents a threat to water systems, air quality or are a fire hazard.

12.2 Examples of Environmental Problems Resulting from Improper Recyclables Management

The following are a few examples of private recycling activities in B.C. which resulted in environmental problems:

- 1) In the spring of 1995, a Victoria area drywall recycling company abruptly ceased operations, leaving behind approximately 2,500 tonnes of drywall at its Langford facility.
- 2) In the Victoria area in 1994, a local recycling company abandoned approximately 15 drums of automobile oil filters after having collected them, for a fee, for recycling.
- 3) In the fall of 1994, a company which had been accepting stumps for recycling for a fee in Surrey disappeared, leaving behind a large pile of stumps on leased land.
- 4) A tire recycling facility in Port Alberni which became insolvent in mid-1994 still has approximately one million tires abandoned on its site in open piles.
- 5) In 1991, a private recycling firm in Delta was accepting wood waste for a fee. The company accumulated a large stockpile of wood waste which suddenly caught fire and burned for approximately two weeks. Smoke from the fire polluted the local air and runoff from the site contaminated a Fraser River tributary.

12.3 Strategy

In the spring of 1994, the CRD Board endorsed a policy that the CRD would only use its new authority granted under the amended Waste Management Act (Bill 29) to protect the environment. Using this policy as a basis, the following three stepped approach has been developed in order to:

- 1) Prevent the abandonment of solid waste collected for recycling and;
- 2) Minimize the risk to the environment from the improper management of solid waste that has been collected for recycling.

The three steps consist of:

- | | |
|-------------|--|
| Step One: | monitoring the solid waste industry and circulating storage limit guidelines to property owners of industrial land and buildings |
| Step Two: | establishing a storage bylaw for specific recyclable wastes |
| Step Three: | implementing a recyclable waste management permit system |

12.4 The Plan

12.4.1 Step One - Monitor the Recycling Industry and Circulating Guidelines

To apprise owners and municipal governments of the potential risks associated with some recycling operations, a guideline similar to Appendix L will be circulated which outlines the material, suggested quantities and bonding levels that should be considered before authorizing such operations. The suggested list is a guideline only and is intended to alert property owners who have industrial-zoned land which they are considering leasing to recycling contractors.

The recycling industry within the CRD will continue to be monitored for environmental problems.

Movement from step one to step two may be implemented through either of the following two means:

- a) A private solid waste management firm may request the CRD to implement step two if it believes other industry members are conducting business in an environmentally unacceptable manner. Requests will be reviewed and a meeting with all interested private solid waste management businesses² will be set to solicit feedback and determine if step two should be implemented. The CRD may elect to call such a meeting if it becomes aware of any unacceptable activities through other means. Should the majority of businesses determine that step two is required, a staff report will be forwarded to the CRD Environment committee outlining the mandate from the industry to enact step two. Step two of the recyclables management plan will be implemented upon approval of the CRD Board.
- b) A limit of three incidents of mismanagement of recyclable waste within a two year period has been established by CRD staff along with a mitigation cost limit of \$50,000 per incident. With Board approval, the CRD may elect to enact step two if either of these two limits is exceeded by companies or individuals.

12.4.2 Step Two - Establish Bylaw to Regulate the Storage of Specific Materials

Step two of the recyclable waste management strategy is to change the step one guidelines into legislation and to enact a regional bylaw to regulate the quantity of recyclable waste that may be stored at one location. The bylaw will define limits on a material specific basis, will grant access to private recycling sites to CRD bylaw staff, and will allow the CRD to issue fines for those who contravene the bylaw. A copy of the draft bylaw which may be enacted is attached as Appendix M. Liaison with municipal planners and other officials will take place prior to Board approval of the Bylaw.

² Solid waste management businesses refer to those stakeholders that have been contacted through the Solid Waste Management Plan process. See Appendix B list of stakeholders interviewed.

Once the bylaw is enacted, the CRD will again begin monitoring the solid waste industry. Should the bylaw fail to eliminate environmental incidents associated with stockpiled recyclable waste, the CRD may move to step three of the recyclable waste management strategy. In addition, any member of the private solid waste industry may request that the CRD implement step three if they believe the bylaw has been unsuccessful in preventing the abandonment of recyclable waste. The CRD will respond to the request in the same manner identified above in step one.

12.4.3 Step Three - Implement a Recyclables Management Permit System

Under step three of the recyclable waste management strategy, the CRD will enact an amendment to the recyclable waste storage bylaw requiring mandatory recyclable waste management permits for all companies accepting recyclable waste for a fee. Permits will require companies to post a bond as a guarantee against the abandonment of the recyclable waste they collect. Companies that abandon their recyclable waste or that damage the environment through negligence in their recyclable waste management practices may forfeit their bond. The bond may be used to finance the transportation of the recyclable waste to another site or to remediate the environmental damage caused by the company's activities. The value the bond will be at the discretion of the CRD to a maximum of \$500,000 and will vary according to the type and quantity of recyclable waste stored and the past performance of the company. A sample of the recyclable waste management permit is attached as Appendix N.

13.0 SOLID WASTE FROM OUTSIDE THE CAPITAL REGION

13.1 Background

CRD bylaw restricts the disposal of solid waste at Hartland landfill originating from generators outside the region. The bylaw is not intended to restrict private solid waste management facilities from accepting solid waste from generators outside the region. Private facilities may require additional feedstock not available within the capital region in order to remain viable.

The Highwest Waste Recyclers Ltd. landfill is currently the only non-CRD solid waste disposal site within the capital region. A privately operated in-vessel composting plant may be soon established at Hartland landfill to accept organic wastes for composting. These two operations have the potential to significantly impact on the CRD's rate of solid waste diversion. In order to ensure that the CRD meets its provincially mandated solid waste diversion goals, it will be necessary for the CRD to track the quantities of waste being imported to these facilities from outside the region.

13.2 The Plan - Waste From Outside of the CRD

The Plan is to allow the HWRL site and the In-vessel Composting Facility to accept solid waste from outside the region, provided it does not adversely impact upon the solid waste diversion goals of this plan. The CRD must be provided with monthly reports of the quantity, type and source of solid waste which is received from outside the region. This data will be used by the CRD in its calculation of regional waste diversion rates.

14.0 DISASTER WASTE MANAGEMENT PLAN

14.1 Background

Natural disasters such as earthquakes, tsunamis and hurricanes can cause significant destruction. Destroyed buildings, vegetation and personal property resulting from a natural disaster represent a large amount of solid waste which must be managed. In order to ensure that potentially recyclable materials are not landfilled in the haste to clean up after such calamities, a plan to manage potentially large amounts of recyclable waste wood, concrete, aggregate, metals, vegetation and other debris is needed.

14.2 The Plan - Disaster Management

The Plan is to develop receiving sites and agreements with local solid waste haulers and recyclers to manage materials produced as a result of a natural disaster. Once completed, the disaster management plan will be incorporated into the SWMP.

15.0 FUNDING

15.1 Capital Works Projects

Funding for all Hartland capital development will be drawn using available funds in Bylaws 1905, 1994, 1604 and 1783 and cash flow generated from operations.

15.2 Operating Budget Funding

All funding required for the solid waste divisions operating budget, including support services, administration, and building and office requirements, is derived either from tipping fees or from the sale of recyclable materials collected through the CRD's recycling programs or other cashflow generated from operations.