Fraser Valley Regional District

SOLID WASTE MANAGEMENT PLAN

Adopted - August, 1996
Amendments Adopted - February, 2000

This Solid Waste Management Plan has been printed on paper containing 30% post consumer fibre.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>i</td>
</tr>
<tr>
<td>LIST OF ABBREVIATIONS AND ACRONYMS</td>
<td>iii</td>
</tr>
<tr>
<td>GLOSSARY OF TERMS</td>
<td>v</td>
</tr>
<tr>
<td>1.0 INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>2.0 PLAN AREA</td>
<td>7</td>
</tr>
<tr>
<td>2.1 GEOGRAPHIC AREA</td>
<td>7</td>
</tr>
<tr>
<td>2.2 WASTE STREAM</td>
<td>9</td>
</tr>
<tr>
<td>2.3 EXISTING SOLID WASTE MANAGEMENT PRACTICES</td>
<td>16</td>
</tr>
<tr>
<td>2.4 EXISTING SOLID WASTE MANAGEMENT FACILITIES</td>
<td>23</td>
</tr>
<tr>
<td>2.5 NEW FACILITIES</td>
<td>32</td>
</tr>
<tr>
<td>3.0 PLAN POLICIES</td>
<td>35</td>
</tr>
<tr>
<td>3.1 REDUCTION &amp; REUSE</td>
<td>35</td>
</tr>
<tr>
<td>3.2 RECYCLING</td>
<td>40</td>
</tr>
<tr>
<td>3.3 COMPOSTING</td>
<td>46</td>
</tr>
<tr>
<td>3.4 ENERGY RECOVERY</td>
<td>50</td>
</tr>
<tr>
<td>3.5 RESIDUALS MANAGEMENT</td>
<td>50</td>
</tr>
<tr>
<td>4.0 IMPLEMENTATION</td>
<td>56</td>
</tr>
<tr>
<td>4.1 DIVERSION TARGETS</td>
<td>56</td>
</tr>
<tr>
<td>4.2 IMPLEMENTATION SCHEDULE</td>
<td>58</td>
</tr>
<tr>
<td>4.3 ADMINISTRATION AND JURISDICTION</td>
<td>65</td>
</tr>
<tr>
<td>4.4 STAFFING</td>
<td>68</td>
</tr>
<tr>
<td>4.5 PLAN MONITORING AND REVIEW</td>
<td>69</td>
</tr>
<tr>
<td>4.6 WASTE DIVERSION CONTINGENCY PLANS</td>
<td>71</td>
</tr>
<tr>
<td>4.7 PROCESS FOR AUTHORIZING NEW FACILITIES</td>
<td>73</td>
</tr>
<tr>
<td>4.8 DISPUTE RESOLUTION PROCEDURES</td>
<td>79</td>
</tr>
<tr>
<td>4.9 PLAN FLEXIBILITY</td>
<td>80</td>
</tr>
<tr>
<td>5.0 PLAN FINANCING</td>
<td>81</td>
</tr>
<tr>
<td>5.1 COST PROJECTIONS</td>
<td>81</td>
</tr>
<tr>
<td>5.2 COST RECOVERY MECHANISMS</td>
<td>85</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS Continued

## 6.0 OPERATING STRATEGIES AND REQUIREMENTS
- [6.1 LANDFILL SITING CRITERIA AND METHODOLOGY](#) 91
- [6.2 OPERATING REQUIREMENTS FOR FACILITIES](#) 93
- [6.3 LICENSES FOR WASTE MANAGEMENT OPERATORS](#) 93
- [6.4 MITIGATIVE MEASURES](#) 94
- [6.5 BEAR MANAGEMENT STRATEGY](#) 100

## 7.0 COMMITTEES
- [7.1 PLAN MONITORING ADVISORY COMMITTEE](#) 102
- [7.2 PLAN IMPLEMENTATION WORKING GROUP](#) 104
- [7.3 PROMOTION AND EDUCATION WORKING GROUP](#) 104
- [7.4 FACILITY SITING WORKING GROUP](#) 105
- [7.5 BYLAW ENFORCEMENT WORKING GROUP](#) 105

## 8.0 BOARD APPROVAL OF THE PLAN

## 9.0 APPENDICES

The following appendices are attached to and form part of the plan:

- [APPENDIX A](#) DRAFT LANDFILL ACTION PLAN OUTLINE
- [APPENDIX B](#) DRAFT OPERATIONAL CERTIFICATES AND EXISTING PERMITS FOR FVRD SOLID WASTE MANAGEMENT FACILITIES
- [APPENDIX C](#) BANNED AND RECYCLED ITEMS AT FVRD LANDFILL SITES
- [APPENDIX D](#) FVRD RECYCLING DEPOTS (1999)
- [APPENDIX E](#) DRAFT WASTE MANAGEMENT LICENSES
- [APPENDIX F](#) PLAN MONITORING ADVISORY COMMITTEE AND WORKING GROUPS - TERMS OF REFERENCE
- [APPENDIX G](#) SOLID WASTE MANAGEMENT PLAN PROGRAM SUMMARY AND ESTIMATED COSTS
- [APPENDIX H](#) FVRD SOLID WASTE MANAGEMENT PLAN AUTHORIZED FACILITIES
EXECUTIVE SUMMARY

The Provincial Government requires all regional districts in British Columbia to complete a Regional Solid Waste Management Plan that will address the Province's goal of a 50% reduction in solid waste requiring disposal by the year 2000. The first three R's of the five "R" waste management hierarchy (Reduce, Reuse, Recycle, Recovery and Residual management) are the management strategies which are to be employed toward reaching the 50% reduction goal.

Accordingly, the former Central Fraser Valley Regional District, Dewdney-Alouette Regional District and Fraser-Cheam Regional District each completed Stages 1 and 2 of their Solid Waste Management Plan development. Only the Regional District of Fraser-Cheam completed a Stage 3 Waste Management Plan and submitted it to MELP in December, 1995.

On December 12th, 1995, the Fraser Valley Regional District (FVRD) was formed, amalgamating the Central Fraser Valley, Dewdney-Alouette and Fraser-Cheam Regional Districts. Upon amalgamation, the Ministry of Environment, Lands and Parks required that only one integrated plan be brought forward for the entire FVRD. The previously completed stages of the aforementioned reports were combined to form one report for the amalgamated regional district, and approved as such by the Regional Waste Manager February 13th, 1996.

The Stage 3 Plan involved building on the information documented in the Stage 2 reports and refining and developing the necessary implementation and monitoring strategies. The Plan area is currently diverting 40% - 45% of its solid waste from landfill by use of the first three R's of the waste management hierarchy (1997). This report makes a number of solid waste management plan objectives aimed at increasing the waste diversion rate. These objectives are summarized in the Plan. The main thrusts of the objectives are listed below:

* Developing a Plan which is environmentally sound, technically and economically feasible, and socially acceptable;
* Reducing the amount of FVRD waste requiring landfilling by 51.5% by the year 2000 (using the 1991 estimated baseline generation rate of 2.55 kg/cap/day);
* Consulting the public on any proposed facilities, or the upgrading of existing facilities, in a manner acceptable to MELP;
* Improving public awareness of solid waste issues and programs through education;
* Encouraging use of packaging that is more environmentally sound;
* Encouraging the Provincial and Federal Governments to develop and implement programs that promote reduction and reuse (including product stewardship) programs that encourage manufacturers to reduce, reuse and/or recycle wastes that are created through manufacturing and inefficient packaging.
Cooperating with the Province and/or industry in the implementation and operation of stewardship programs, such as the paint stewardship program and used motor oil program, as long as the funding and liability responsibilities remain with the sponsoring industry;

* Minimizing undesirable waste handling and disposal methods, including littering and illegal dumping;

* Providing reasonable access to recycling, composting and disposal facilities to all residents and businesses within the FVRD, allowing waste diversion to the maximum extent possible;

* Targeting materials coming from institutional, commercial and industrial (ICI), and demolition, construction, and land clearing (DLC) sectors for diversion through reduction and reuse, recycling and composting;

* Controlling the wastes generated within the community but not necessarily through the direct provision of Regional District services (i.e., fostering the development of private industrial initiatives) where appropriate;

* Cooperating with adjacent Regional Districts when such cooperation is mutually advantageous.

* Fostering the existing landfill and haulage agreement between the Central Fraser Valley subregion (i.e. City of Abbotsford) and the Greater Vancouver Regional District, while developing options in the event that the agreement is no longer available or viable for any reason;

* Eliminating the open burning of municipal solid waste (including DLC waste) where appropriate; and

* Developing a financial strategy for full cost recovery of the entire waste management system, including a movement towards a complete user-pay system.

Implementation of these Plan objectives at both local and senior government levels is predicted to bring the Plan area's waste diversion rate up to 51.5% by the year 2000 which surpasses the Provincial goal. Implementation of the objectives forwarded by this Plan is expected to have only a marginal increase in cost (less than 0.02 cents per $1000 of assessed property value) over the current system for residents of the Plan area.
LIST OF ABBREVIATIONS AND ACRONYMS

ABBREVIATIONS

°C      degree Celsius
cm      centimetres
ha      hectare (10,000 square metres)
kg      kilogram
kg/m³   kilograms per cubic metre - a density measurement used to indicate the degree of compaction in a landfill
km      kilometre
km²     square kilometre
mm      millimetre
m²      square metre
m³      cubic metre
tonne   one metric tonne = 1,000 kilograms

ACRONYMS

CFVRD   Central Fraser Valley Regional District
DARD    Dewdney-Alouette Regional District
FCRD or RDFC Fraser-Cheam Regional District
FVRD    Fraser Valley Regional District
GVRD    Greater Vancouver Regional District
ACS     Abbotsford Community Services
AMRD    Abbotsford-Mission Recycling Depot
ESC     Environmental Services Coordinator
FSAC    Facilities Siting Advisory Sub-Committee
FTE     Full Time Employee
MELP    Ministry of Environment, Lands, and Parks
NPO     Non-Profit Organization
PAC     Public Advisory Committee
PFAC    Plan Financing Advisory Sub-Committee
PMAC    Plan Monitoring Advisory Committee
PTE     Part Time Employee
TAC     Technical Advisory Subcommittee
WRP     Waste Reduction Plan
WMC     Waste Management Coordinator
WSML    Waste Stream Management Licence
LCA     Life Cycle Analysis
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFC</td>
<td>Chloro-Fluoro-Carbons</td>
</tr>
<tr>
<td>DLC</td>
<td>Demolition, Land clearing and Construction debris</td>
</tr>
<tr>
<td>HDPE</td>
<td>High Density Polyethylene plastic</td>
</tr>
<tr>
<td>HHW</td>
<td>Household Hazardous Wastes</td>
</tr>
<tr>
<td>ICI</td>
<td>Industrial, Commercial and Institutional sectors</td>
</tr>
<tr>
<td>JAMES</td>
<td>Joint Abbotsford Mission Environmental System (wastewater treatment plant)</td>
</tr>
<tr>
<td>LDPE</td>
<td>Low Density Polyethylene plastic</td>
</tr>
<tr>
<td>MSW</td>
<td>Municipal Solid Waste</td>
</tr>
<tr>
<td>OC</td>
<td>Operational Certificate (MELP)</td>
</tr>
<tr>
<td>OCC</td>
<td>Old Corrugated Cardboard</td>
</tr>
<tr>
<td>OCP</td>
<td>Official Community Plan</td>
</tr>
<tr>
<td>ODS</td>
<td>Ozone Depleting Substances</td>
</tr>
<tr>
<td>PET</td>
<td>Polyethylene Terephthalate plastic</td>
</tr>
<tr>
<td>tpcy</td>
<td>Tonnes of waste generated or disposed of per capita per year</td>
</tr>
<tr>
<td>WTE</td>
<td>Waste To Energy</td>
</tr>
<tr>
<td>3R's</td>
<td>Reduce, Reuse, Recycle</td>
</tr>
<tr>
<td>5R's</td>
<td>Reduce, Reuse, Recycle, Recovery, Residual Management</td>
</tr>
<tr>
<td>BUD</td>
<td>Buy only what you need, Use only what you buy, Dispose of what you cannot use in a environmentally responsible manner</td>
</tr>
</tbody>
</table>
### GLOSSARY OF TERMS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Land Reserve</td>
<td>Provincial zones established to protect high priority agricultural land in British Columbia, based on the land's potential for agricultural use.</td>
</tr>
<tr>
<td>Biomedical Waste</td>
<td>Anatomical wastes, or contaminated with blood or body fluids generated by human or animal health care facilities.</td>
</tr>
<tr>
<td>Boxboard</td>
<td>Cardboard typically used for food packaging such as cereal boxes and cracker boxes.</td>
</tr>
<tr>
<td>Cell</td>
<td>A pocket of landfilled waste including daily cover of predetermined size and completely surrounded by intermediate cover.</td>
</tr>
<tr>
<td>Commingle</td>
<td>To include more than one material type in the same load. Used most often in reference to putting all dry recyclables into the same blue bag for recycling.</td>
</tr>
<tr>
<td>Compaction</td>
<td>Increasing the density (mass for a given volume) of waste by passing over it with landfill equipment.</td>
</tr>
<tr>
<td>Composition</td>
<td>The relative quantities of specified components of municipal waste.</td>
</tr>
<tr>
<td>Compost</td>
<td>A soil conditioner made by controlled biological decomposition of the organic fraction of the waste stream, such as yard waste, paper, and kitchen waste.</td>
</tr>
<tr>
<td>Cover, Daily</td>
<td>A compacted layer of at least 0.15 m of cover material which is placed on exposed waste at the end of each operating day.</td>
</tr>
<tr>
<td>Cover, Final</td>
<td>A layer of material or composite materials generally 0.6 to 1.0 m thick placed on a landfill where no additional solid waste will be deposited which serves to restrict infiltration, support vegetation, control methane migration, promote surface drainage, control blowing litter, reduce odours, and minimize presence of flies and rats.</td>
</tr>
<tr>
<td>Cover Material</td>
<td>Soil or other material approved for use in sealing landfill cells.</td>
</tr>
<tr>
<td>Environment</td>
<td>Air, land, water and all other external conditions or influences under which man, animals and plants live or are developed.</td>
</tr>
</tbody>
</table>
### GLOSSARY OF TERMS, cont'd

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazardous Wastes</strong></td>
<td>Substances and their containers which are explosive, corrosive, flammable, reactive and/or toxic.</td>
</tr>
<tr>
<td><strong>Hog Fuel</strong></td>
<td>Low grade woodwaste material which is not usable for pulp chips. This material is usually a by-product of an industrial process such as shake and shingle production.</td>
</tr>
<tr>
<td><strong>Infiltration</strong></td>
<td>Water, typically from precipitation, which permeates the soil cover or solid waste surface.</td>
</tr>
<tr>
<td><strong>Landfill Volume</strong></td>
<td>The volume taken up in a landfill by a specified quantity of waste at an assumed compaction rate and the appropriate volume of cover soil.</td>
</tr>
<tr>
<td><strong>Leachate</strong></td>
<td>A liquid formed in a landfill by precipitation infiltrating the waste dissolving and suspending contaminants from the decomposing waste.</td>
</tr>
<tr>
<td><strong>Leachate Collection System</strong></td>
<td>A system to collect leachate generated in a landfill, typically a gravel filter medium and/or a perforated pipe system.</td>
</tr>
<tr>
<td><strong>Liner</strong></td>
<td>A material of low permeability underlying or covering a landfill to prevent migration of leachate from a site, consisting either of clay or geosynthetic materials.</td>
</tr>
<tr>
<td><strong>Materials Recovery Facility (MRF)</strong></td>
<td>A facility for the sorting and separation of recyclable from the waste stream.</td>
</tr>
<tr>
<td><strong>Putrescible</strong></td>
<td>The organic fraction of the waste stream which tends to decompose quickly. It may or may not smell depending upon conditions and, in any case, the smell disappears after a while.</td>
</tr>
<tr>
<td><strong>Recovery</strong></td>
<td>The reclamation of recyclable components and/or energy from the post-collection waste stream.</td>
</tr>
<tr>
<td><strong>Recycling</strong></td>
<td>The separation of products or materials which are no longer usable in their present form and the subsequent use of these materials in the manufacture of new products.</td>
</tr>
<tr>
<td>GLOSSARY OF TERMS, cont'd</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Reduction</strong></td>
<td>The decrease of volume, weight or toxicity of material that enters the waste system.</td>
</tr>
<tr>
<td><strong>Residual Management</strong></td>
<td>The disposal of waste in an environmentally safe manner after reduction, reuse, recycling and recovery have been implemented.</td>
</tr>
<tr>
<td><strong>Reuse</strong></td>
<td>The repeated use of an object in the same form but not necessarily for the same purpose.</td>
</tr>
<tr>
<td><strong>Rural Unit</strong></td>
<td>Residential units outside of the urban core. For the purposes of this report any unit within the Plan area and without municipal refuse collection is considered a rural unit.</td>
</tr>
<tr>
<td><strong>Sanitary Landfill</strong></td>
<td>A method of disposing of refuse on land without creating nuisances or hazards to public health or safety by utilizing the principles of engineering to confine the refuse to the smallest practical area, to reduce it to the smallest practical volume, and to cover it with a layer of earth at the conclusion of each day's operation or at such more frequent intervals as may be necessary (Sanitary Landfill Manual of Practice, ASCE).</td>
</tr>
<tr>
<td><strong>Septage</strong></td>
<td>The solids which accumulate over time in septic tanks.</td>
</tr>
<tr>
<td><strong>Solid Waste</strong></td>
<td>Discarded materials, substances, or objects; commonly referred to as refuse or garbage.</td>
</tr>
<tr>
<td><strong>Solid Waste Stream</strong></td>
<td>The aggregate of all solid waste components and the process through which they move from the point of generation to ultimate disposal.</td>
</tr>
<tr>
<td><strong>Special Waste</strong></td>
<td>Residual material that requires special considerations for handling or disposing (as defined in the Special Waste Regulations of the Waste Management Act), such as dangerous goods, waste oil, waste asbestos, waste pest control products, and leachable waste.</td>
</tr>
<tr>
<td><strong>Tipping Fee</strong></td>
<td>A fee charged for wastes including refuse, recyclables, and compostables, at the point of processing or disposal.</td>
</tr>
<tr>
<td><strong>GLOSSARY OF TERMS. cont’d</strong></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Urban Multi-Family Unit</strong></td>
<td>Residential units in urban areas which are in a complex consisting of three or more units within the same building or on a common property. These units include apartments, condominiums, townhouses, and trailer parks. Trailer Parks in the rural areas are considered rural units for the purposes of solid waste management.</td>
</tr>
<tr>
<td><strong>Urban Single-Family Unit</strong></td>
<td>Residential units in urban areas commonly receiving municipal refuse collection and having less than two units in the same building or on a common property.</td>
</tr>
<tr>
<td><strong>Waste Diversion</strong></td>
<td>The act of avoiding waste disposal through reduction, reuse, recycling and recovery.</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

Under Bill 58, the Waste Management Amendment Act (1989), Regional Districts were required to develop and submit solid waste management plans to the Ministry of Environment Lands and Parks (MELP) on or before December 31, 1995, unless an extension was approved by the Ministry. According to the MELP document, "Requirements for Solid Waste Management Plans", such plans must include measures that would help achieve the provincial goal of reducing by 50% the per capita amount of municipal solid waste requiring disposal by the year 2000. A reduction to 1.17 kg/person/day (430 kg/person/yr) would be required to meet Ministry goals. The waste reduction measures contained in this document were to be based on the sequential hierarchy of the 5Rs - Reduce, Reuse and Recycle - plus Recovery and Residuals management. In 1992, Bill 29 further amended the Waste Management Act to expand the definition of municipal solid waste (MSW) to:

* include demolition, land clearing and construction (DLC) waste;
* expand the scope of solid waste management planning to include recyclable material; and
* provide new enabling authority that would allow Regional Districts to implement the strategies of their solid waste management plans without having to go to the electorate for direct approval.

In accordance with the requirements of the Waste Management Act of 1989 and its later amendments, the former Central Fraser Valley Regional District (CFVRD) and the Dewdney-Alouette Regional District (DARD) each completed Stages 1 and 2 of their Plan development. The Fraser-Cheam Regional District (RDFC) completed all three stages of the Plan. In general, the Stage 1 reports included the following:

* description of the physical, geographic and political nature of the Regional District;
* description of the existing solid waste management system, including recycling, composting and disposal;
* an economic assessment of the feasibility of a post-recycling waste-to-energy facility (CFVRD and DARD only); and
* development of the general options which could be used to help divert solid waste from disposal using the principles of reduction, reuse, recycling and recovery.
The three Stage 2 reports included detailed examinations of diversion options, including:

* education and promotion requirements,
* reduction and reuse incentives,
* recycling and composting programs,
* evaluation of alternative disposal options, and
* a phased implementation plan for the recommended components.

Stage 3 of the process involved the writing of the Plan (this is the completion of the stages and thus stages are no longer referred to). After analysis of the waste reduction options developed in Stage 2, alternatives were selected and a comprehensive Implementation Plan developed. The Ministry of Environment, Lands and Parks (MELP) document, "Guide to the Preparation of Regional Solid Waste Management Plans by Regional Districts" (hereafter referred to as the "Guidelines") contains a list of Plan requirements. These requirements are included in this final Plan:

- a description of the existing solid waste management system and waste stream;
- a description of the existing geography and local governments;
- the identification and outline of specific waste reduction programs;
- a schedule for the implementation of these programs;
- a scheduled list of associated budget requirements;
- a procedure to fill information gaps and develop additional programs; and
- an administration system for implementation of the Plan.

On December 12th, 1995, the Fraser Valley Regional District (FVRD) was formed, amalgamating the Central Fraser Valley, Dewdney-Alouette and Fraser-Cheam Regional Districts. Upon amalgamation, the Ministry of Environment, Lands and Parks required that only one integrated plan be brought forward for the entire FVRD. The previously completed stages of the aforementioned reports were combined to form one report for the amalgamated regional district, and approved as such by the Regional Waste Manager February 13th, 1996.

As discussed earlier, only the Regional District of Fraser-Cheam completed Stage 3 of their regional plan. It was submitted to MELP and received approval in April 1996, with the condition that a Fraser Valley region-wide plan be completed by September 1996.

The draft Plan was reviewed by a Public Advisory Committee (PAC) and Technical Advisory Committee (TAC) which met jointly for the purpose of the review. The final draft incorporated all necessary changes based on the Advisory Committee review.

Solid Waste Management Plan Amendments Adopted- February 2000
The Advisory Committee was consulted on the need for a formal public review process. Once finalized, the Regional Board approved the Plan and submitted it to the MELP for review and approval (August, 1996). Once the Ministry was satisfied that the Plan was in accordance with the Act and the Guidelines, the Plan was approved by the Minister. Following Ministry approval, the Regional Board adopted the Plan on November 26th, 1996, and proceeded with implementation.

The following sections describe the strategies and policies that make up the FVRD Solid Waste Management Plan:

1. The remainder of Section 1 contains a description of the guiding principles and solid waste management plan objectives.

2. Section 2 describes the Plan area, the existing waste stream, and the existing waste management practices and facilities.

3. Section 3 describes the Plan policies and strategies that reflect the guiding principles and objectives.

4. Section 4 outlines how these strategies should be implemented. This includes an implementation schedule, target diversion rates, administrative considerations, potential staffing levels and plan monitoring procedures. Dispute resolution and addition of new facilities to the Plan are also discussed.

5. Section 5 contains a summary of cost estimates and cost recovery mechanisms necessary for effective implementation of the Plan.

6. Section 6 contains operating strategies and requirements needed for Plan implementation. These include mitigative measures required to overcome impacts of facilities; landfill siting methodologies and criteria; operating requirements for facilities; licenses for operators; and risk assessment criteria for setting security bonds. A bear management strategy is included, with the intent of reducing human/bear conflicts at garbage disposal locations.

7. Section 7 contains specifics about the various committees that could be required to assist in implementation of the Plan. The appendices contain a draft Operational Certificate, draft Licences, Committee and Working Groups Terms of Reference, and a Plan Program Summary with related costs. These appendices form part of the Plan.
1.1 GUIDING PRINCIPLES OF THE PLAN

Environmental protection underlies all Plan policies and strategies, acting as a guide for making day-to-day decisions during the implementation stage of the Plan. The environmental guiding principles, as stated below, were based on principles developed previously in Stage 2 reports. The guiding principles are as follows:

* The consumption of material and energy resources shall be set at a level that maximizes ecological sustainability, wherever possible.

* The regional solid waste stream will be reduced to the greatest extent possible, in accordance with the hierarchy of Reduce, Reuse and Recycle.

* The goal of provincial environmental policy is to minimize pollution. FVRD strategies for achieving that goal shall be in accordance with the precautionary principle - the prevention of contamination to soil, water and air before it happens.

* Existing infrastructure, equipment, facilities, and contracts will be utilized and incorporated into the Plan where possible.

* Individuals and firms within the FVRD should be enabled to make environmentally sound choices about consumption of resources and generation of waste through provision of appropriate information.

* Incentives to encourage reduction, reuse, recycling and composting should include user-pay and market-based mechanisms, making producers and consumers of products and packages accountable for the waste management costs associated with them.

* Reduction policies and strategies, and other new solid waste management programs and facility sitings, shall be developed through public consultation to be socially acceptable and cost-effective, and based on the identification of both monetary and non-monetary costs and benefits.

* The Plan shall recognize that individual regions and communities have diverse needs. The regional role will be primarily one of coordination and
monitoring of programs being implemented by member municipalities and
the Regional District, and implementation of programs for electoral areas.

* Emphasis will be placed on private sector implementation of services,
where possible and appropriate.

1.2 REGIONAL PLAN OBJECTIVES

Regional objectives are reflected in the specific policies or strategies of the Plan.
During the development of Stage 1 and 2 reports, it became evident that the
citizens and businesses of the FVRD have certain objectives for the Plan. These
objectives include the following:

* Developing a Plan which is environmentally sound, technically and
economically feasible, and socially acceptable.

* Reducing the amount of FVRD waste requiring landfiling by 51.5% by the
year 2000 (using the 1991 estimated baseline generation rate of 2.55
kg/cap/day). This 51.5% comprises 11.1% waste diversion through
reduction and reuse programs (8.8% of this through senior government
initiatives), and 40.4% through FVRD and member municipality recycling
and composting initiatives.

* Consulting the public on any proposed waste management facilities, or
the upgrading of existing facilities, in a manner acceptable to MELP.

* Improving public awareness of solid waste issues and programs through
education.

* Encouraging the reduction of packaging.

* Encouraging the Provincial and Federal governments to develop and
implement programs that promote reduction and reuse. This includes
product stewardship programs that encourage manufacturers to reduce,
reuse and/or recycle wastes that are created through manufacturing and
inefficient packaging.

* Cooperating with the Province and/or industry in the implementation and
operation of stewardship programs, such as the paint stewardship
program and used motor oil program, provided funding and liability
responsibilities remain with the sponsoring industry.
Minimizing undesirable waste handling and disposal methods, including littering and illegal dumping.

Providing to all residents and businesses within the FVRD, reasonable access to recycling, composting and disposal facilities; allowing waste diversion to the maximum extent possible.

Targeting materials coming from institutional, commercial and industrial (ICI), and demolition, construction, and land clearing (DLC) sectors for diversion through reduction and reuse, recycling and composting.

Fostering the development of private industrial initiatives, where appropriate, in the control of wastes generated within the community.

Cooperating with adjacent Regional Districts when such cooperation is mutually advantageous.

Fostering the existing landfill and haulage agreement between the City of Abbotsford and the Greater Vancouver Regional District (GVRD), while developing options in the event that the agreement is no longer available or viable.

Eliminating open burning of municipal solid waste (including DLC waste), where possible.

Developing a financial strategy for full cost recovery of the entire waste management system, including movement towards user-pay systems.
2.0 PLAN AREA

2.1 GEOGRAPHIC AREA

The Fraser Valley Regional District was incorporated on December 12, 1995 and is an amalgamation of three previously existing Regional Districts; Central Fraser Valley Regional District, Dewdney-Alouette Regional District and Regional District of Fraser-Cheam. The new district covers a vast area, and includes two Cities, three Districts, one Village and eight electoral areas. These include:

* The City of Abbotsford
* The City of Chilliwack
* The District of Hope
* The District of Kent
* The District of Mission
* The Village of Harrison Hot Springs
* Boston Bar, North Bend and Canyon Alpine (Electoral Area A)
* Yale, Dogwood Valley, Spuzzum, Sunshine Valley and Laidlaw (Electoral Area B)
* Hemlock Valley, Harrison Mills and Lake Errock (Electoral Area C)
* Popkum and Bridal Falls (Electoral Area D)
* Chilliwack River Valley, Cultus Lake, and Columbia Valley (Electoral Area E)
* McConnell Creek and Hatzic Prairie (Electoral Area F)
* Hatzic Island, Dewdney, Deroche and Nicomen Island (Electoral Area G)
* Sumas Mountain (Electoral Area H)

A map showing the Fraser Valley Regional District boundaries as of December 2, 1996, is included in Figure 2-1.

The Regional District encompasses high productivity agricultural lowlands in the floodplain of the Fraser River valley, as well as higher elevation regions of coastal rain forest. Due to the physical expanse of the Regional District, there is a wide range of climate and vegetation. The district encompasses primarily coastal western hemlock and mountain hemlock biogeoclimatic zones, with some smaller pockets of Engelmann spruce - subalpine spruce in higher elevations to the east, and interior Douglas fir in the Fraser Canyon. Climate varies from a moderate coastal environment in the lower areas of the Fraser Valley to a more temperate environment in higher and more eastern regions.
In 1996, the population of the Fraser Valley Regional District was estimated to be approximately 230,042. This includes 37,145 from Dewdney-Alouette, 110,756 from Central Fraser Valley and 82,141 from Fraser-Cheam. Table 2-1 shows the estimated populations and population growth rates from the sub-areas of the Regional District.

The Fraser Valley population is divided into many different communities with varied waste management systems and programs already in place. This diversity and the resulting community needs for waste management have been recognized in the formation of this Plan.

2.2 WASTE STREAM

The earlier stages of the waste management planning process were completed for three separate geographical and political entities, and the estimates of waste stream quantities and types varied from sub-region to sub-region. These figures were used to estimate a 1991 baseline waste generation rate for the amalgamated Fraser Valley Regional District.

Current waste stream calculations are skewed for a number of reasons. Factors contributing to inaccurate waste generation and waste disposal rates are discussed in this section and include:

- the 1992 inclusion of DLC waste as part of the municipal solid waste stream (as per Bill 29, Waste Management Act);
- unknown quantities of waste dumped illegally at unauthorized sites;
- unknown quantities of waste migrating out of the Regional District; and
- undetermined quantities of waste disposed through burning in backyards, on-site at new developments, and on-site after demolition.

2.2.1 Sub-Regional Waste Stream Calculations

The Central Fraser Valley (currently the City of Abbotsford and Electoral Area H) estimated an overall baseline waste generation rate for 1991 of 0.95 tonnes per capita per year (tpcy), or 2.6 kilograms per capita per day (kg/cap/day). This includes all waste, both disposed of and diverted, from all three waste generation sectors; residential, Industrial/Commercial/Institutional (ICI) and Demolition/Land Clearing/Construction (DLC). Of this 0.95 tonnes, it was estimated that, in 1994, approximately 15 to 25% was being diverted through recycling and composting.
An approximate breakdown of the waste stream from the Central Fraser Valley is shown in Table 2-2.

Dewdney-Alouette Regional District (currently the District of Mission and Electoral Areas F, G and part of C) estimated an overall baseline waste generation rate for 1991 of 1.04 tpcy or 2.86 kg/cap/day. Again, this is all waste generated in all three sectors, whether disposed or handled through other means. It was estimated that, in 1994, approximately 45% of the waste was being diverted through recycling and composting. The highest diversion rate in Dewdney-Alouette was accomplished through the ICI and DLC sectors, which are primarily profit-driven, private sector establishments. An approximate breakdown of the waste stream from Dewdney-Alouette is shown in Table 2-3. The District of Mission's waste generation rate does not include land clearing debris since it is burned on site and therefore does not enter the waste stream.

Fraser-Cheam Regional District (currently the City of Chilliwack, the Districts of Hope and Kent; the Village of Harrison Hot Springs; and Electoral Areas A, B, C, D, and E) estimated an overall baseline waste generation rate for 1991 of 0.80 tpcy or 2.2 kg/cap/day. This is quite a bit less than the other two sub-areas, perhaps accounted for by the rural nature of the region and an underestimation of waste generated by the ICI and DLC sectors. It was estimated that, in 1991, the Fraser-Cheam diversion rate was 4.2%. In 1994, it was estimated that the diversion rate was 26.5%. This was accomplished by a combination of private ICI and DLC recycling, and residential recycling. An approximate breakdown of the waste stream from Fraser-Cheam is shown in Table 2-4.

The above sub-regional waste generation rates were used to estimate a 1991 baseline waste generation rate for the amalgamated Fraser Valley Regional District. This waste generation rate was calculated to be 0.93 tonnes/capita or 2.55 kg/cap/day.

With implementation of Plan objectives, it is estimated that by the year 2000 the overall per capita diversion rate for the FVRD will be approximately 51.5%. This 51.5% comprises 11.1% waste diversion through reduction and reuse programs (8.8% of this through senior government initiatives), and 40.4% through FVRD and member municipality recycling and composting initiatives. This diversion equates to 0.48 tonnes of waste being diverted from landfill per capita, per year.
| YEAR     | CITY OF   | DISTRICT OF | DISTRICT OF | DISTRICT OF | VILLAGE OF | ELECTORAL | ELECTORAL | ELECTORAL | ELECTORAL | ELECTORAL | ELECTORAL | ELECTORAL | ELECTORAL | REGIONAL |
|----------|-----------|-------------|-------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|---------|
| 1991-1996 | Abbotsford | 4.1%        | 4.2%        | 1.8%        | 2%         | 1.7%      | 0.5%      | 1.5%      | 0.5%      | 2%        | 7.5%      | 1%        | 1.5%      | 10%      | 4.2%    |
| 1996-2001 | 4.6%      | 4.1%        | 2.2%        | 1.8%        | 1.7%       | 1.7%      | 0.5%      | 1.5%      | 1%        | 2%        | 5%        | 1%        | 1.5%      | 10%      | 3.6%    |
| 2001-2005 | 3.1%      | 4.1%        | 1.6%        | 1.8%        | 1.7%       | 1.7%      | 1%        | 1.5%      | 1%        | 1.7%      | 3%        | 1%        | 1.5%      | 8%       | 2.8%    |
| 2006-2011 | 2.2%      | 4.1%        | 1.4%        | 1.8%        | 1.7%       | 1.7%      | 1%        | 1.5%      | 1%        | 1.7%      | 2.5%      | 1%        | 1.5%      | 8%       | 2.3%    |
| 2011 BEYOND | 2.2%    | 4.1%        | 1.3%        | 1.8%        | 1.7%       | 1.7%      | 1%        | 1.5%      | 1%        | 1.7%      | 2.5%      | 0.8%      | 1.5%      | 5%       | 2.3%    |
| 1991     | 87,150    | 26,938      | 50,914      | 4,634       | 6,016      | 655       | 976       | 519       | 259       | 660       | 835       | 3,213     | 3,911     | 210      | 186,890 |
| 1996     | 110,418   | 32,932      | 62,600      | 5,066       | 6,656      | 711       | 976       | 559       | 266       | 729       | 1,201     | 3,337     | 4,213     | 338      | 230,042 |
| 2001     | 138,465   | 40,260      | 69,796      | 5,539       | 7,227      | 772       | 1,001     | 602       | 280       | 805       | 1,533     | 3,549     | 4,539     | 545      | 274,912 |
| 2006     | 161,566   | 49,218      | 75,561      | 6,056       | 7,847      | 838       | 1,052     | 649       | 294       | 874       | 1,777     | 3,730     | 4,890     | 800      | 315,152 |
| 2011     | 180,112   | 60,170      | 81,000      | 6,621       | 8,520      | 910       | 1,106     | 699       | 309       | 949       | 2,011     | 3,920     | 5,268     | 1,089    | 352,771 |
| 2014     | 192,036   | 67,878      | 84,200      | 6,985       | 8,952      | 957       | 1,139     | 731       | 319       | 997       | 2,165     | 4,015     | 5,508     | 1,361    | 377,345 |
TABLE 2-2
ESTIMATED TOTAL WASTE COMPOSITION FOR CENTRAL FRASER VALLEY SUBREGION BROKEN DOWN INTO WASTE GENERATION SECTORS INCLUDING DLC

<table>
<thead>
<tr>
<th>Waste Component</th>
<th>Percent of Total Waste Stream (by weight)</th>
<th>1991 Baseline</th>
<th>1996 Current</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Real (%)</td>
<td>ICI (%)</td>
<td>DLC (%)</td>
</tr>
</tbody>
</table>
| Paper Products
  Newspaper R         | 14.9     | 7.3     | 0.0     | 22.3     | 18,327         | 23,295         |
  Fine Paper R            | 4.8      | 0.6     | 0.0     | 5.4      | 4,458          | 5,652          |
  Boxboard R              | 0.3      | 1.2     | 0.0     | 2.0      | 1,651          | 2,093          |
  OCC R                   | 2.6      | 0.1     | 0.0     | 2.7      | 2,229          | 2,826          |
  Mixed Paper/Magazines R | 2.6      | 4.1     | 0.0     | 6.7      | 5,531          | 7,013          |
  Glass R                 | 4.1      | 1.3     | 0.0     | 5.4      | 4,453          | 5,652          |
  Plastic R               | 2.4      | 1.0     | 0.0     | 3.4      | 2,807          | 3,559          |
  Metals R                | 2.3      | 1.9     | 0.0     | 4.7      | 3,880          | 4,919          |
  Non-Ferrous R           | 1.0      | 2.3     | 0.0     | 3.3      | 2,724          | 3,456          |
  Ferrous R               | 0.4      | 0.9     | 0.0     | 1.3      | 1,073          | 1,361          |
  Rubber/Leather/Textiles R| 0.6      | 1.4     | 0.0     | 2.0      | 1,651          | 2,093          |
  Compostables C          | 1.8      | 0.2     | 0.0     | 2.0      | 1,651          | 2,093          |
  Food/Agricultural Waste C| 12.4     | 8.4     | 0.0     | 20.8     | 17,171         | 21,770         |
  Yard Waste C            | 6.8      | 4.6     | 0.0     | 11.4     | 4,451          | 6,913          |
  Wood Waste C            | 5.5      | 1.2     | 0.0     | 6.7      | 5,531          | 7,013          |
  Diapers                 | 0.1      | 2.6     | 0.0     | 2.7      | 2,229          | 2,826          |
  Household Hazardous     | 0.6      | 0.0     | 0.0     | 0.6      | 495            | 628            |
  Special Wastes          | 0.6      | 0.0     | 0.0     | 0.6      | 495            | 628            |
  White Goods             | 0.5      | 0.1     | 0.0     | 0.6      | 495            | 628            |
  Bulky Items             | 0.5      | 0.0     | 0.0     | 0.6      | 495            | 628            |
  Other                   | 2.7      | 1.7     | 0.0     | 4.4      | 3,652          | 4,605          |
  Demolition/Land Clearing | 0.0      | 0.0     | 36.2    | 36.2     | 29,885         | 37,389         |
  Mixed Wood R            | 0.0      | 0.0     | 10.8    | 10.8     | 8,916          | 11,204         |
  Mixed Soil R            | 0.0      | 0.0     | 9.7     | 9.7      | 8,008          | 10,152         |
  roofing & unclassified R| 0.0      | 0.0     | 6.1     | 6.1      | 5,036          | 6,335          |
  Concrete & Asphalt C    | 0.0      | 0.0     | 5.4     | 5.4      | 4,458          | 5,652          |
  Stumps & Brush C        | 0.0      | 0.0     | 2.8     | 2.8      | 2,313          | 2,931          |
  Other R                 | 0.0      | 0.0     | 1.4     | 1.4      | 1,155          | 1,465          |
  Total                   | 40.8     | 23.0    | 36.2    | 100.0    | 82,555         | 104,664        |
  Recyclable C            | 21.1     | 12.3    | 8.5     | 42.1     | 34,714         | 44,011         |
  Compostable R           | 12.4     | 8.4     | 10.9    | 31.7     | 26,170         | 33,179         |
  Waste                   | 7.3      | 2.1     | 16.9    | 26.3     | 21,671         | 27,474         |
# TABLE 2-3

ESTIMATED TOTAL WASTE COMPOSITION FOR DEWDNEY-ALOUETTE SUBREGION, 1994
BROKEN DOWN INTO WASTE GENERATION SECTORS INCLUDING DLC

<table>
<thead>
<tr>
<th></th>
<th>RESIDENTIAL (tonnes)</th>
<th>INDUSTRIAL (tonnes)</th>
<th>COMMERCIAL (tonnes)</th>
<th>INSTITIONAL (tonnes)</th>
<th>DLC* (tonnes)</th>
<th>TOTAL (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disposed</td>
<td>Recycled</td>
<td>Disposed</td>
<td>Recycled</td>
<td>Disposed</td>
<td>Recycled</td>
</tr>
<tr>
<td>Mixed Garbage</td>
<td>0.0</td>
<td>0.0</td>
<td>19.1</td>
<td>0.0</td>
<td>217.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Cardboard</td>
<td>373.7</td>
<td>93.3</td>
<td>131.0</td>
<td>48.2</td>
<td>832.2</td>
<td>1,153.9</td>
</tr>
<tr>
<td>Mixed Paper</td>
<td>1,519.9</td>
<td>928.7</td>
<td>146.9</td>
<td>2.3</td>
<td>649.3</td>
<td>268.1</td>
</tr>
<tr>
<td>Contaminated Paper</td>
<td>988.1</td>
<td>21.6</td>
<td>44.1</td>
<td>0.0</td>
<td>347.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Glass</td>
<td>361.0</td>
<td>93.3</td>
<td>5.7</td>
<td>0.0</td>
<td>72.5</td>
<td>17.1</td>
</tr>
<tr>
<td>Bottles (pop &amp; beer)</td>
<td>180.0</td>
<td>9.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>676.2</td>
</tr>
<tr>
<td>Steel (tonge)</td>
<td>317.2</td>
<td>503.1</td>
<td>401.0</td>
<td>92.3</td>
<td>419.0</td>
<td>2,654.3</td>
</tr>
<tr>
<td>Mixed Paps</td>
<td>1,519.9</td>
<td>928.7</td>
<td>146.9</td>
<td>2.3</td>
<td>649.3</td>
<td>268.1</td>
</tr>
<tr>
<td>Kitchen Waste</td>
<td>1,483.1</td>
<td>505.1</td>
<td>380.6</td>
<td>0.0</td>
<td>1,215.0</td>
<td>627.3</td>
</tr>
<tr>
<td>Yard Waste</td>
<td>955.6</td>
<td>1,480.3</td>
<td>156.8</td>
<td>0.0</td>
<td>138.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Wood Waste</td>
<td>189.3</td>
<td>0.0</td>
<td>855.3</td>
<td>18.9</td>
<td>623.4</td>
<td>59.0</td>
</tr>
<tr>
<td>Mixed Plastics</td>
<td>1,117.3</td>
<td>18.7</td>
<td>75.5</td>
<td>0.1</td>
<td>429.7</td>
<td>44.9</td>
</tr>
<tr>
<td>Used Oil</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>208.8</td>
</tr>
<tr>
<td>Oil Filters</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.8</td>
<td>1.4</td>
<td>10.1</td>
</tr>
<tr>
<td>Antifreeze</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.6</td>
<td>8.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Solvents</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.1</td>
<td>0.0</td>
<td>12.7</td>
</tr>
<tr>
<td>Batteries (lead-acid)</td>
<td>9.0</td>
<td>3.6</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>55.5</td>
</tr>
<tr>
<td>Tires</td>
<td>3.8</td>
<td>21.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>204.4</td>
</tr>
<tr>
<td>Asphalt/Concrete</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>1,533.6</td>
<td>233.4</td>
<td>5.9</td>
<td>0.4</td>
<td>123.1</td>
<td>24.3</td>
</tr>
<tr>
<td>Total</td>
<td>8,700.1</td>
<td>3,921.1</td>
<td>2,221.9</td>
<td>166.4</td>
<td>5,170.7</td>
<td>6,002.6</td>
</tr>
</tbody>
</table>

*For the purpose of this table, DLC refers to Demolition and Construction debris.*
# TABLE 2-4

**ESTIMATED TOTAL WASTE COMPOSITION FOR FRASER CHEAM SUBREGION (tonnes)**

**RESIDENTIAL AND INDUSTRIAL WASTE STREAMS**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>% OF SOLID WASTE STREAM GENERATED</th>
<th>1994 ESTIMATED TONNAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>23.0%</td>
<td>18,118</td>
</tr>
<tr>
<td>Glass</td>
<td>5.0%</td>
<td>2,745</td>
</tr>
<tr>
<td>Metal</td>
<td>5.3%</td>
<td>2,910</td>
</tr>
<tr>
<td>Plastic</td>
<td>8.2%</td>
<td>4,502</td>
</tr>
<tr>
<td>Rubber/Leather</td>
<td>1.5%</td>
<td>824</td>
</tr>
<tr>
<td>Organic</td>
<td>30.9%</td>
<td>16,965</td>
</tr>
<tr>
<td>Construction/Demolition</td>
<td>4.5%</td>
<td>2,471</td>
</tr>
<tr>
<td>Bulkly/White Goods</td>
<td>2.5%</td>
<td>1,373</td>
</tr>
<tr>
<td>Other</td>
<td>9.1%</td>
<td>4,996</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>54,904</strong></td>
</tr>
<tr>
<td>Residential</td>
<td>34.0%</td>
<td>18,667</td>
</tr>
<tr>
<td>ICI</td>
<td>34.0%</td>
<td>18,667</td>
</tr>
<tr>
<td>DLC</td>
<td>25.0%</td>
<td>13,726</td>
</tr>
<tr>
<td>Agricultural/Semi-Solids</td>
<td>7.0%</td>
<td>3,843</td>
</tr>
</tbody>
</table>
2.2.2 Factors Effecting Waste Stream Calculations

The Fraser Valley Regional District estimated an overall waste generation rate for 1991 of 0.93 tonnes/capita or 2.55 kg/cap/day. Current waste diversion rates are calculated using the tonnage diverted from disposal in any given year, as a factor of the total tonnage generated in 1991 (the baseline year). Only a small amount of landclearing, construction, and demolition waste received at landfills was included as part of the waste stream in the base year. The vast majority of DLC waste was being burned on-site at the time, and was not included in the 1991 waste generation rate calculation. For this reason, the baseline waste generation rate is incorrect (not high enough), effecting current waste diversion calculations.

As open burning restrictions have come into effect, there has been a considerable increase in material going to illegal dump sites and landfills. Many of these sites fall outside of Regional District boundaries, giving rise to waste migration. Without accurate records of migrating waste and waste entering illegal dump sites (sites not authorized in the Plan), it is impossible to determine a true annual disposal rate, and subsequently, an annual diversion rate.

Not all DLC waste is being disposed of, however. Large quantities are entering composting facilities or being recycled to some degree. When higher composting rates are compared against 1991 waste generation figures (which do not include this material), waste diversion rates are skewed to indicate higher waste diversion, giving a false indicator of how much has been reduced. Figures for migrating DLC waste which is being composted or recycled are also unknown.

In addition to the above, significant quantities of putrescible household waste (collected primarily from multi-family dwelling units) is being disposed of at the Roosevelt Landfill in Washington State. This waste is being transported via a transfer station constructed by Salish Disposal Inc. in January of 1996. A Plan amendment application for this facility has been made to the Regional District. As a result, it is hopeful that these quantities will eventually be released for inclusion in waste generation calculations.

With these factors taken into consideration, it is critical that estimates of waste materials going to non-authorized facilities be made to the best of municipal and Regional District Staff's abilities. Whether this waste is disposed of, composted or recycled, these figures are essential for the calculation of reasonable waste generation and diversion rates for any given year.
2.3 EXISTING SOLID WASTE MANAGEMENT PRACTICES

This section provides a summary of existing (1999) waste reduction, reuse, recycling and residuals management practices within the Fraser Valley Regional District. The Regional District has been divided into areas according to their current waste management programs. A summary of these waste management practices is shown in Table 2-5.

Reduction & Reuse initiatives are established to varying degrees in the FVRD. The following waste reduction practices have been developed to encourage these first two stages of the 3Rs:

* tipping fees greater than the minimum required to run the landfill and transfer stations, resulting in economic incentives for those using these facilities to cut down the amount of waste disposed;
* can limits and user fees for over-limit bags in the City of Abbotsford, District of Mission and District of Hope;
* material bans at the Matsqui Transfer Station and Bailey, Hope and Minnie's Pit Landfills (as per Appendix C);
* separation of certain materials at the landfill, such as brush, wood waste, gyproc, scrap metal, white goods and scrap tires;
* distribution of subsidized backyard composting bins to residents;
* endorsement of senior government initiatives to reduce the solid waste stream, such as industry stewardship programs, deposit/refund legislation and the National Packaging Protocol;
* distribution of ‘The Work Waste Reduction Kit’ - A Waste Audit Procedures Manual targeting the Commercial Sector to divert waste materials from the landfill through reduction, reuse and recycling;
* dissemination of additional educational materials (A Beginner’s Guide to Backyard Composting, the “Waste Not” Newsletter) by the Regional District and member municipalities;
* ‘The Bulging Bucket’ education centre, housed on-site at the AMRD, will focus on teaching children the importance of the 3Rs through the creative reuse of waste materials; and
* additional reuse and repair opportunities through the private sector.
<table>
<thead>
<tr>
<th>Previous RD</th>
<th>Area</th>
<th>Sector</th>
<th>Recycling</th>
<th>Composting</th>
<th>Collection</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFVRD</td>
<td>City of Abbotsford</td>
<td>Res</td>
<td>Bluebag Collection</td>
<td>Backyard</td>
<td>Municipal Crew &amp; Municipal Contract (Salish)</td>
<td>Matsqui Transfer Station</td>
</tr>
<tr>
<td></td>
<td>ICI/DLC</td>
<td></td>
<td>Office Paper Collection</td>
<td>Private (Answer)</td>
<td>Private</td>
<td>Matsqui Transfer Station</td>
</tr>
<tr>
<td></td>
<td>Electoral Area H</td>
<td>All</td>
<td>Drop-Off</td>
<td>Backyard Drop-Off</td>
<td>Private</td>
<td>Matsqui Transfer Station</td>
</tr>
<tr>
<td>RDFC</td>
<td>District of Chilliwack</td>
<td>Res</td>
<td>Green Bin Drop-Off</td>
<td>Backyard</td>
<td>Private</td>
<td>Private (various) Bailey Road Landfill</td>
</tr>
<tr>
<td></td>
<td>ICI/DLC</td>
<td></td>
<td>Curbside</td>
<td>Backyard</td>
<td>Private (Ag-Gro)</td>
<td>Bailey Road Landfill Kel-Mor Landfill Cheam Band Landfill</td>
</tr>
<tr>
<td></td>
<td>District of Hope</td>
<td>Res</td>
<td>Bluebag Collection</td>
<td>Backyard</td>
<td>Municipal Contract (R&amp;R)</td>
<td>Hope Landfill</td>
</tr>
<tr>
<td></td>
<td>ICI/DLC</td>
<td></td>
<td></td>
<td>Yard Waste Collection</td>
<td>Hope Landfill Private (R&amp;R)</td>
<td>Hope Landfill Private (DLC)</td>
</tr>
<tr>
<td></td>
<td>District of Kent</td>
<td>Res</td>
<td>Blue Bin Drop-Off</td>
<td>Backyard</td>
<td>Private</td>
<td>Bailey Road Landfill</td>
</tr>
<tr>
<td></td>
<td>ICI/DLC</td>
<td></td>
<td>Private (soon to be collection)</td>
<td>Backyard</td>
<td>Private (Ag-Gro)</td>
<td>Bailey Road Landfill</td>
</tr>
<tr>
<td></td>
<td>Village of Harrison Hot Springs</td>
<td>Res</td>
<td>Blue Bin Drop-Off</td>
<td>Backyard</td>
<td>Municipal Crew</td>
<td>Bailey Road Landfill</td>
</tr>
<tr>
<td></td>
<td>ICI/DLC</td>
<td></td>
<td>(soon to be collection)</td>
<td>Backyard</td>
<td>Private</td>
<td>Bailey Road Landfill</td>
</tr>
<tr>
<td></td>
<td>Electoral Area A</td>
<td>All</td>
<td>Nil (soon bluebag collection)</td>
<td>Backyard</td>
<td>Municipal Contract (R&amp;R)</td>
<td>Chaumont Road Landfill</td>
</tr>
<tr>
<td></td>
<td>Electoral Area's B, C</td>
<td>All</td>
<td>Bluebag Curbside</td>
<td>Yard Waste Collection Private</td>
<td>Municipal Contract (R&amp;R)</td>
<td>Hope Landfill</td>
</tr>
<tr>
<td></td>
<td>Electoral Area D</td>
<td>All</td>
<td>Blue Bin Drop-Off</td>
<td>Backyard</td>
<td>Private</td>
<td>Bailey Road Landfill</td>
</tr>
<tr>
<td></td>
<td>Electoral Area E</td>
<td>All</td>
<td>Private (soon to be drop-off)</td>
<td>Backyard</td>
<td>Private</td>
<td>Bailey Road Landfill</td>
</tr>
<tr>
<td></td>
<td>Electoral Area F</td>
<td>All</td>
<td>Bluebag Drop-Off</td>
<td>Backyard</td>
<td>Municipal Contract (Salish)</td>
<td>Harrison Mills T.S. Hemlock Valley T.S. Bailey Road Landfill</td>
</tr>
<tr>
<td>DARD</td>
<td>District of Mission</td>
<td>USF</td>
<td>Bluebag Collection</td>
<td>Curbside Collection &amp; Backyard</td>
<td>Municipal Contract (WMFY)</td>
<td>Minnie's Pit Landfill</td>
</tr>
<tr>
<td></td>
<td>UMF Rural</td>
<td></td>
<td>Bluebag Collection</td>
<td>Curbside Collection</td>
<td>Private</td>
<td>Minnie's Pit Landfill Minnie's Pit Landfill Private (DLC)</td>
</tr>
<tr>
<td></td>
<td>ICI/DLC</td>
<td></td>
<td>Bluebag Drop-Off</td>
<td>Drop off/Backyard Private</td>
<td>Private</td>
<td>Minnie's Pit Landfill Private (DLC)</td>
</tr>
<tr>
<td></td>
<td>ICI/DLC</td>
<td></td>
<td>Private</td>
<td></td>
<td>Private</td>
<td>Sylvester Road T.S. Athey Road T.S. Minnie's Pit Landfill</td>
</tr>
</tbody>
</table>
2.3.1 District of Mission

The District of Mission has a comprehensive residential 3R's program in place, as well as incentives for the ICI and DLC sectors. Urban single family residents receive weekly collection of refuse, recyclables and compostables. Refuse is taken to the Minnie's Pit landfill for disposal. Recyclables, collected commingled in blue bags, are taken to the Abbotsford/Mission Recycling Depot (AMRD) in Abbotsford. Backyard composting is prevalent throughout the District of Mission, and the District has operated a subsidized composter distribution program for its residents. Compostables, which include organic garden wastes, yard wastes, kitchen wastes and food contaminated paper products (such as pizza boxes, contaminated boxboard, etc.), are also collected curbside and taken to the Ferndale Institution. The institution is a federal corrections facility located in Mission at 33737 Dewdney Trunk Road, for in-vessel composting. Open windrows are used for curing the in-vessel product and for composting "clean green" yard and garden wastes.

Collection services for this program are currently contracted to Smithrite Disposal Ltd. and paid for by a utility fee on tax notices and user fees. The annual fee pays for collection of up to 2 bags per week of refuse, with each additional bag currently costing $2. Urban multi-family residents receive recyclables and compostables collection, but must make private collection arrangements or self-haul refuse.

Rural residents and the ICI sector are responsible for their own refuse collection, choosing from four main contractors in the area. Waste is taken to Minnie's Pit landfill. In the rural areas, recyclables and compostables may be taken to several drop-off depots throughout the Regional District. The ICI sector primarily uses the private sector for recycling such materials as brush, wood waste, gyproc, scrap metal, white and brown goods, scrap tires, batteries, auto hulks and building supplies.

2.3.2 City of Abbotsford

The City of Abbotsford also has a comprehensive 3R's program. Currently, all single family dwellings have mandatory collection of refuse and bluebagged recyclables. The basic service, consisting of weekly collection of two cans of garbage, is paid for by a utility fee on tax notices. Extra bags cost $1.50 each. The refuse is taken to the Matsqui Transfer Station operated under contract with the GVRD. Economics permitting,
some valuable materials, such as metals or OCC are separated, and the waste is hauled to Cache Creek landfill for disposal. The bluebag recyclables from the City collection program are taken to the AMRD processing facility.

Although it is currently being considered by the City of Abbotsford, there is no organized collection system for recyclables in place for multi-family dwellings or the ICI sector. Some businesses receive collection of office paper from AMRD and the private sector.

Residential composting is restricted to backyard composting and yard waste drop-off. The City has distributed partially subsidized backyard composters to interested residents. The drop-off facility is located at the old Valley Road Landfill near the Matsqui Transfer Station. This facility uses a simple windrow system, which is turned on a very occasional basis.

2.3.3 City of Chilliwack

Curbside refuse and recyclables collection is not mandatory in the City of Chilliwack. Residents and businesses are responsible for making their own arrangements with one of the local haulers. In 1998, approximately 78% of single family dwellings in the City subscribed to curbside collection, while the remainder self-hauled to the Bailey Road landfill.

The City of Chilliwack utilizes the "Green Bin" drop-off system for recycling. This consists of several drop-off depots, with compartmentalized roll-off bins. The collection, processing, and marketing of the recyclable materials is currently handled under private contract to the City. Disposal bans are in place at the Bailey Road landfill, for materials currently accepted in the recycling program. Private waste haulers are cooperating with the City in this matter, banning recyclables in collected garbage.

Ag-Gro Composting, a private composting operation known as Pit 43, processes compostable wastes, including wood and yard waste. In addition, some backyard composters have been distributed to District residents.
2.3.4 **District of Hope**

A private contractor supplies mandatory garbage collection and unlimited curbside recycling to District of Hope residents and businesses. Yard waste collection is provided to all residents in the District. Some compostable materials are hauled to a local farmer for composting and use in an organic farming operation, and the remainder is processed at the Hope landfill and used as a top cover. The Hope landfill also accepts scrap metal, white goods, tires, clean woodwaste, and compostables for recycling or composting. The woodwaste is accepted for a nominal tipping fee, stockpiled and tub ground for composting. Refuse is taken to the Hope landfill for disposal.

It has been estimated that approximately 44% of generated waste is diverted from landfill through District recycling and composting programs (1998). Disposal bans at the landfill encourage the contractor to achieve high diversion rates.

2.3.5 **District of Kent**

The District of Kent does not operate a curbside collection program for waste or recyclable materials. Residents and businesses are responsible for making their own arrangements with one of the local haulers. Residential and small commercial recycling is accomplished through a staffed drop-off depot in Agassiz. Recyclables are then taken to the MRF located at 930 - 6th Avenue in Hope for processing. Since the District of Kent also uses the Bailey Road landfill, the disposal bans at that landfill encourage Kent residents to participate in the recycling program. There is no formal composting program in Kent, but residents have access to subsidized backyard composting bins.

2.3.6 **Village of Harrison Hot Springs**

In the Village of Harrison Hot Springs, residential waste collection and bluebag recycling services are paid for by a utility fee on tax notices. A blue bin drop-off program operated under a private contract provides recycling options for small commercial businesses. The Village of Harrison Hot Springs uses the Bailey Road landfill in the City of Chilliwack. Disposal bans in place at that landfill encourage residents and businesses alike to participate in recycling.
There is no formal composting program in Harrison Hot Springs, but residents have access to subsidized backyard composting bins.

2.3.7 **Electoral Area A - Boston Bar / North Bend**

Electoral Area A consists of the communities of Boston Bar and North Bend, as well as small clusters of settlement along the highway and in the Nahatlatch Valley. In Boston Bar and North Bend, refuse is collected on a weekly basis and hauled to the Chaumox landfill, operated by the Regional District. The collection service is provided by R&R Recycling on contract to the Regional District. There are currently no formal composting or recycling programs available to the residents in Area A. Residential composting activities are limited to backyard composting.

2.3.8 **Electoral Area B - Spuzzum, Yale, Dogwood Valley, Sunshine Valley, Laidlaw, Flood**

Residents and businesses in the communities of Electoral Area B are serviced with curbside collection. Sunshine Valley residents make use of a depot for both waste and recycling. Collection services are provided by a private contractor, under contract with the District of Hope. The Regional District contracts with the District of Hope for these services, but the Districts are directly accountable to the contractor for their own area. The refuse collected through this program is hauled to the Hope landfill. Bluebag recyclables and yard waste collection services are available to the main communities, and to rural areas through shared collection sites. These services, in conjunction with disposal bans at the landfill, result in a high rate of recovery in this Electoral Area.

2.3.9 **Electoral Area C - Harrison Mills, Hemlock Valley**

Solid waste transfer stations are provided in Harrison Mills and Hemlock Valley. Waste from the Hemlock Valley and Harrison Mills stations is taken to the Matsqui Transfer Station in Abbotsford. The Harrison Mills Transfer Station also accepts bluebag recyclables.

Residential composting activities are limited to backyard composting.

The ICI and DLC sectors in this electoral area either self-haul to Minnie’s Pit or contract private haulers for waste disposal, recycling and composting.
2.3.10 **Electoral Area D - Popkum, Bridal Falls**

Like the City of Chilliwack, Electoral Area D has no organized collection service, and therefore, it is up to individual residents and businesses to either self-haul waste to the Bailey Landfill or contract refuse and recyclables collection. Residential composting activities are limited to backyard composting.

The ICI and DLC sectors in the electoral area use private sector mechanisms for waste disposal, recycling and composting.

2.3.11 **Electoral Area E - Chilliwack River Valley, Cultus Lake, Columbia Valley**

Like the City of Chilliwack and Electoral Area D, Electoral Area E has no organized collection service. Individual residents and businesses either self-haul waste to the Bailey Landfill for disposal or contract refuse collection. There is no local recycling in Area E, but there are plans to expand the blue bin system to the Chilliwack River Valley. Residential composting activities are limited to backyard composting.

There is curbside refuse collection for the Cultus Lake Park Board by Park crews, with residuals disposed of at the Cultus Lake landfill. In addition, there are recycling bins in the park provided by the City of Chilliwack. The ICI and DLC sectors in the Electoral Area either self-haul waste to the Bailey Landfill or use private haulers for waste disposal, recycling and composting.

2.3.12 **Electoral Areas F & G - Hatzic Prairie, Dewdne, Deroche**

Residents and businesses of Electoral Areas F and G are responsible for their own refuse collection, making their own arrangements with one of the local haulers or self hauling to a transfer station. There are two transfer stations in the electoral areas, Sylvester Road Transfer Station and Athey Road Transfer Station. From the Sylvester Road and Athey Road stations, waste is taken to Minnie's Pit landfill.

Recycling and composting is provided to residents and businesses through bluebag drop-off bins at depots throughout the regional district. The Sylvester Road Transfer Station also accepts bluebag recyclables.
Commercial businesses have access to the depots also, but many choose to utilize the private sector for recycling materials such as old corrugated cardboard (OCC), scrap metal, wood and gyproc.

2.3.13 Electoral Area H - Sumas Mountain

Sumas Mountain is a rural area with acreage-type residential development. Residents are responsible for making their own arrangements for all aspects of waste management. Waste is self-hauled to the Matsqui Transfer Station; recyclables self-hauled to the AMRD; and composting is done on-site. Other than tipping fees, there are no charges for use of the adjacent municipal recycling infrastructure. There have been discussions with the City of Abbotsford with respect to annexing this area, in which case, it may be amalgamated into the City’s waste management programs.
2.4 EXISTING SOLID WASTE MANAGEMENT FACILITIES

The following recycling facilities, composting facilities and residuals management facilities exist within the Fraser Valley Regional District:

2.4.1 Recycling and Composting Facilities

2.4.1.1 Abbotsford/Mission Recycling Depot (AMRD)

The Abbotsford Community Services recycling program began in 1977 as a drop-off newspaper recycling program. This quickly grew into a full-scale recycling facility accepting curbside collected recyclables for sorting and processing. The AMRD was constructed in 1990. The facility included a small tipping area, conveyor belts to feed materials, sorting lines to separate different materials, and balers to prepare materials for shipping. The facility accepts collected material from Mission, Abbotsford, and the surrounding Electoral Areas. Abbotsford Community Services is contracted to manage the recycling program.

The facility was expanded in 1998, providing a larger covered tipping area, more covered storage space for baled materials, improved employee and client facilities, and additional indoor space for mobility around the sorting area.

An on-site education centre will be added in 1999, housing 'The Bulging Bucket'. This centre will focus on teaching children the importance of the 3Rs through the creative reuse of waste materials and the demonstration of quality recycled goods donated from businesses in the community.

2.4.1.2 The Answer Garden Products Ltd.

The Answer is a private composting facility near Aldergrove, owned and operated by Consolidated Envirowaste Industries. For $65 per tonne, this facility accepts compostable waste from both the GVRD and the FVRD. Non-putrescible waste, e.g. yard waste, is mixed and shredded in a tub grinder, then moved to large outdoor windrows. The piles are occasionally turned and take up to two months to mature.

In addition to open windrow composting The Answer operates an in-vessel compost facility that is capable of handling cooked food, dairy, and meat wastes from both the GVRD and FVRD. Currently, the
in-vessel facility is shut down, however it could be up in full operation in the near future.

This facility may need to be upgraded to comply with *The Production and Use of Compost Regulation*, and an operational certificate may be required.

2.4.1.3 Ag-Gro Composting Systems Ltd.

Ag-Gro is a private composting operation in Chilliwack on a site referred to as Pit 43. The land is owned by the City of Chilliwack and leased to Ag-Gro Composting Systems Ltd. The facility accepts DLC waste as well as feedmill, vegetable and hatchery wastes for composting in a static windrow system. This system results in a product which is sold in bulk, mostly to mushroom growers and landscapers. Tipping rates for materials that are dropped off range up to $58 per tonne. This facility may need to be upgraded to comply with *The Production and Use of Compost Regulation*, and an operational certificate may be required.

2.4.1.4 R&R Recycling

R&R operates a recycling and composting collection service for the District of Hope and Electoral Area B. The majority of compostable materials are taken to the Hope landfill for processing, as described in Section 2.3.4. Selected materials are taken to a local farming operation for composting. The recyclable materials are taken to R&R’s own sorting and processing facility, although some items (i.e. scrap metal and tires) are taken to the Hope landfill for processing. At the facility, co-mingled recyclables are accepted and hand sorted to separate the various materials and material grades. They accept a large variety of materials, including all plastic resins. R&R is also an authorized “Paint Care” Facility and “Encorp” Bottle Depot.

2.4.1.5 Valley Road Landfill Site

The Valley Road Site, located just west of the Matsqui Transfer Station and Abbotsford/Mission Recycling Depot, was closed as a landfill in 1992. It now acts as a windrow composting operation for Abbotsford residents. They accept most yard waste, including grass, leaves, garden waste, brush, and wood waste.
2.4.2 **Residuals Management Facilities**

There are seven active landfills in the FVRD authorized by the August 1996 SWMP. These include Minnie’s Pit in Mission, the Bailey Road landfill in Chilliwack, the Hope landfill, the Cultus Lake landfill, the Chaumox landfill in North Bend, Boulder Bay landfill and Stave Lake landfill. As per Ministry policy, all disposal sites will be upgraded to the current Landfill Criteria.

There are five transfer stations operating in the Regional District. These are: the Matsqui Transfer Station in Abbotsford, which transfers waste to the Cache Creek landfill; the Sylvester Road and Athey Road sites in Electoral Areas F & G, from which waste is transferred to Minnie’s Pit landfill; and the Harrison Mills and Hemlock Valley sites in Electoral Area C, from which waste is transferred to the Matsqui Transfer Station. In addition, the Valley Road landfill has an open cell which serves as an emergency backup for the Matsqui Transfer Station.

Two unauthorized sites, the Cheam Band landfill and the Kel-Mor landfill, accept DLC waste on native lands.

The following sections describe these sites.

2.4.2.1 **Minnie’s Pit Landfill**

Minnie’s Pit landfill is owned by the District of Mission and is currently operated under private contract. The landfill serves the District of Mission and surrounding electoral areas, handling 13,000 tonnes of waste a year, for a total population of approximately 36,000 in 1998. The landfill accepts residuals from the Abbotsford/Mission Recycling Depot, as well as materials for composting on-site such as grass clippings, brush, leaves and clean fill. The District has implemented disposal bans at the landfill on most of the recyclable materials accepted in local programs. These materials include: newspapers, old corrugated cardboard (OCC), plastic resin numbers 1 and 2, metal food cans, glass bottles, wood waste and rubber tires. Operating hours of the site are from 8:00 a.m. to 5:00 p.m., seven days a week except holidays. The site has weigh scales and the tipping fee is $60 per tonne for general refuse. The site is expected to operate until 2018 to 2025 if the District chooses to laterally expand the current site boundaries.
The site was upgraded in 1996 with the addition of a new entrance, a low permeability membrane cover over a portion of the landfill, and a leachate collection facility.

### 2.4.2.2 Bailey Road Landfill

The Bailey Road landfill is owned by the City of Chilliwack and operated on contract by a private firm. The landfill serves the City of Chilliwack, the District of Kent, the Village of Harrison Hot Springs, and Electoral Areas D and E, a total population of approximately 77,850 in 1999. The annual tonnage accepted at the site is approximately 22,460 tonnes (1998), at a current tipping fee of $73 per tonne. An Alternative Daily Cover (ADC), made of thermally degradable plastic film, is used as daily cover five days per week. Utilization of ADC conserves approximately 25% of the airspace that would be consumed if gravel was used in its place. The projected date of closure, is approximately 2019. The City of Chilliwack has implemented disposal bans at the landfill on most of the recyclable materials accepted in local programs. These materials include: newspapers, old corrugated cardboard (OCC), milk jugs, plastic pop containers, metal food cans, glass bottles, wood waste and rubber tires. Permanent landfill inspectors have been employed to conduct random spot checks on incoming loads to ensure compliance with bans.

In addition to waste oil and lead-acid batteries, white goods, scrap metal and gyproc are accepted at the site for recycling.

### 2.4.2.3 Cultus Lake Landfill

The Cultus Lake landfill is owned and operated by the Cultus Lake Park Board. The annual tonnage accepted at the site is approximately 630 tonnes. The landfill is expected to close between 2000 and 2005. Cultus Lake Park will be expected to meet the MELP closure requirements for this site. After closure, waste will be directed to the Bailey Road landfill.

### 2.4.2.4 District of Hope Landfill

The Hope landfill is owned and operated by the District of Hope. The landfill serves the District of Hope and Electoral Area B, a total population of approximately 8,228 in 1998. The annual tonnage accepted at the site is approximately 3,000 tonnes, (actual 3,025 for 1998) at a tipping fee of
$70 per tonne. An expansion of the site was completed in 1998, extending the life of the landfill to 2018. A closure plan has been prepared for the landfill.

There is currently a composting operation at the landfill site, and stockpile areas for clean wood waste, rubber tires, scrap metals, and white goods. CFCs are removed from the white goods prior to recycling. Lead-acid batteries are also accepted at the site. The District of Hope has implemented disposal bans at the landfill on most of the recyclable materials accepted in local programs. These materials include: newspapers, old corrugated cardboard (OCC), plastic resin numbers 1 and 2, metal food cans, glass bottles, trees, stumps, compostables, asphalt and concrete.

2.4.2.5 Chaumox Landfill

The Chaumox Road landfill in North Bend is owned and operated by the FVRD. The landfill serves the Electoral Area A, a population of approximately 900 residents. The annual residential tonnage accepted at the site is approximately 340 tonnes. Because this landfill was unattended for many years, it is likely that tonnage from industrial operations, such as the railway and saw mill, was disposed of in the landfill unrecorded. It is also likely that some of the waste had its origins in areas outside Electoral Area A. As the landfill is currently staffed during all hours of operation, annual waste quantities accepted will be more accurate. The landfill is expected to close in the year 2013.

A feasibility study was completed in 1998, comparing the cost to operate the landfill in accordance with a new draft OC to the cost to close the landfill and, construct and operate a transfer station. Under the transfer station option waste would be hauled to the Cache Creek Landfill. The public will be surveyed to determine which option it favours. An option will be chosen and implemented by the spring of the year 2000.

The Regional District developed a plan to improve operations at the site, including gates, supervision, and tipping fees. In February of 1999, a new contractor began operation and maintenance services at the landfill, in accordance with the plan. Any future improvements of the landfill will be done with full public consultation.
2.4.2.6 Valley Road Landfill Standby Cell

The Valley Road landfill was the main landfill serving the former District of Matsqui until approximately 1992, when it was closed in favour of the Matsqui Transfer Station and Cache Creek Landfill. A cover was installed on the closed landfill and a lined emergency cell opened as an "overflow" for the transfer station in case the haul is temporarily interrupted. The discharge of waste is authorized under MELP permit PR-8090 and a number of permit conditions must be satisfied prior to the commencement of the discharge.

2.4.2.7 Boulder Bay Landfill

This landfill is operated under permit issued by MELP for the sole use of the Attorney General's Department, for the disposal of waste originating from their correctional institution.

2.4.2.8 Stave Lake Landfill

This landfill is operated under permit issued by MELP for the sole use of the Attorney General's Department, for the disposal of waste originating from their correctional institution.

2.4.2.9 Cheam Band Landfill

A private company operates a DLC landfill on the Cheam Band property. This site is not permitted under the provincial or federal systems. This site accepts primarily DLC waste and some dry household waste from private haulers in the FVRD and GVRD. As this property does not comply with BC Environment standards for landfills, or this Plan, the Regional District does not sanction the delivery of waste to this site.

2.4.2.10 Kel-Mor Landfill

A private company, named Kel-Mor Enterprises, operates a DLC landfill on the Tzeachten Band property. This site is not permitted under the provincial or federal systems. This site accepts DLC waste primarily from private haulers in the FVRD and GVRD. As this property does not comply with BC Environment standards for landfills, or this Plan, the Regional District does not sanction the delivery of waste to this site.
2.4.2.11 Matsqui Transfer Station

The Matsqui Transfer Station is owned by the GVRD and its operation is contracted to Wastech Services. The transfer station was set up as part of a large-scale regional waste transfer system for the GVRD and adjacent municipalities, which involves, among other disposal means, hauling waste to the Cache Creek landfill. It serves the City of Abbotsford and Electoral Area H (Sumas Mountain). Operating hours are 7:00 a.m. to 5:00 p.m. Monday through Friday, and 8:00 to 5:00 Saturday. There are some disposal bans enacted at the site, including hazardous wastes, earth fill, gypsum, quantities of passenger vehicle tires, fibreglass insulation, auto hulks and liquids. Some materials, such as gypsum and old corrugated cardboard, are separated out and set aside for recycling. The tipping fee at the transfer station is the regional rate set by the GVRD, $66 per tonne (1999).

2.4.2.12 Harrison Mills Transfer Station

The Harrison Mills transfer station, owned by the FVRD, is a small site serving Harrison Mills and much of Electoral Area C. The station bins are serviced by private contract with the Regional District. This site is open Sunday & Friday 12:00 p.m. to 6:00 p.m., Monday & Thursday 7:00 a.m. to 12:00 p.m. The transfer station accepts both waste and recyclables. Waste from this site is transported to Matsqui Transfer Station.

2.4.2.13 Hemlock Valley Transfer Station

The Hemlock Valley transfer station is a small site serving the Hemlock Valley Community and Resort. The station bins are serviced by private contract to the Regional District. This site is open 24 hours with no supervision or tipping fees. Both waste and recyclables are accepted at the site. Waste from this site is transported to the Matsqui Transfer Station, and recyclables are taken to the AMRD recycling facility in Abbotsford.

2.4.2.14 Sylvester Road Transfer Station

The Sylvester Road transfer station is owned by the FVRD. The station bins are supplied and serviced by private contract. This site serves residents of Electoral Areas F and G, and is open from 9:00 a.m. to 4:00 p.m. Saturday, Sunday and Monday accepting waste and bluebagged
recyclables. Waste from this site is transported to Minnie’s Pit landfill. Bluebags are transported to the Abbotsford/Mission Recycling Depot in Abbotsford.

2.4.2.15 Athey Road Transfer Station

The Athey Road transfer station, also owned by the FVRD, is a smaller site than the Sylvester Road transfer station. The station bins are supplied and serviced by private contract. This site serves a small portion of Electoral Areas F & G, and is open Saturday from 9:00 a.m. to 4:00 p.m. for waste only. Waste from this site is transported to Minnie’s Pit landfill. There are currently no facilities for recycling at the site, due to space constraints.

2.4.3 Animal Incinerators

2.4.3.1 SPCA Chilliwack

This incinerator is located at the Chilliwack Sewage Treatment Plant, 44820 Wolfe Rd [Lot 34, District Lot 256, Group 2 New Westminster District Plan 42770]. It is currently operating under Waste Management Permit number PA-6411, issued to the District of Chilliwack for a pathological incinerator. This permit will eventually be superseded by a MELP Operating Certificate.

2.4.3.2 F.I.P. Services, Mission

This incinerator is located in Mission at 33149 London Avenue. [Lot D, Section 16, Township 17, Plan 3405, NWD]. It is currently operating under Waste Management Permit number PA-10496, issued to Mary Van Pelt for a pathological incinerator. This permit will eventually be superseded by a MELP Operating Certificate.

2.4.4 Closed Landfills

2.4.4.1 Valley Road Landfill

The Valley Road landfill was the main landfill serving the former District of Matsqui until approximately 1992, when it was closed in favour of the Matsqui Transfer Station and the Cache Creek haul.
2.4.4.2. Boston Bar Landfill

Sealed off in 1988. Closure plans have been submitted. Site is inactive.

2.4.4.3. Harrison Hot Springs Landfill

Very little is known about this landfill. No problems have been documented.

2.4.4.4. Kent Landfill

Closed in 1992 following the shutting down of the incinerator and transfer of solid waste to the Bailey landfill.

2.4.4.5. Mission Flats Landfill

Used as a landfill prior to 1971. Exact extent of site is unknown. There are no signs of adverse environmental effects from this site.

2.4.4.6. McCallum Road Landfill

Serving the former District of Matsqui and the City of Abbotsford, the landfill was closed in 1979 in favour of the Trethewey Street Landfill and the Valley Road Landfill. Leachate management works have been installed. No problems have been documented.

2.4.4.7. Trethewey Street Landfill

Serving the former District of Matsqui, the landfill was closed in 1984 in favour of the Valley Road Landfill. Leachate and landfill gas management works have been installed. Monitoring and discharge of leachate are administered under Waste Management Permit PR-01504.

2.4.4.8. Wolfe Road Landfill

Serving the former City of Chilliwack, the landfill was closed in 1982 in favour of the Bailey Landfill. Groundwater and landfill gas are not monitored. The landfill was operated under Waste Management Permit PR-1563.
The Regional District acknowledges that there may be closed and abandoned landfills within its boundaries that have not been identified. Such landfills will be documented and consolidated within this Plan as their location, ownership, and state become apparent. Mitigative activities at these sites will be determined in consultation with the owners and MELP.

2.5 NEW FACILITIES

The following sections describe and specify operational requirements of facilities that have been constructed and commenced operation following the adoption of the original Solid Waste Management Plan in August, 1996.

2.5.1 Residual Management

2.5.1.1 Bradner Road Select Waste Landfill

A Select Waste Landfill will be constructed at 8413 Bradner Road in the City of Abbotsford [Parcel A, (reference plan 9186) of the Northeast corner Section 28, Township 14, Except: Parcel “One”, (Explanatory Plan 11979), New Westminster District] during the spring or summer of 1999. The landfill will be restricted to the discharge of concrete rubble, re-bar (if it is contained in concrete), land clearing debris and clean soil fill. Whenever feasible, marketable wood will be recovered from the waste stream and removed from the site to be reused or recycled. All material that is delivered or removed from the site will be quantified and documented with quarterly reports issued (starting Jan. 1 of each new year) to the FVRD. This facility will not be operated beyond 4 years from the date of operational start-up, at which point construction of the facility’s final closure begins. The operation and closure of this facility will comply with all specifications contained within the report Ken Smith & Son Limited - Operations and Closure Plans for Proposed Select Waste Landfill Site, Matsqui, B.C., revised October, 1996 and the Operational Certificate issued by the Ministry of Environment, Lands and Parks.

Additional requirements include that:
- because of the nature of the traffic, access to the site from Bradner Road will be along River Road only;
- no more than 10 trucks per day are permitted to access the site via River and Bradner roads;

Solid Waste Management Plan

Amendments Adopted- February 2000
• trucks hauling to this facility will be limited to between the hours of 7:00 a.m. to 6:00 p.m. from Monday to Friday;
• the Fire Safety Plan must be acceptable to the City of Abbotsford;
• a Security payable and acceptable to BC Environment and the FVRD for any environmental liabilities resulting from this operation both pre and post closure, respectively;
• the operator, at the discretion of the City of Abbotsford, must comply with the requirements of the *City of Abbotsford’s Consolidated Soil Removal and Deposit Bylaw*;
• the operator must pay the cost of an independent full-time inspector to monitor all loads entering the facility. This inspector and their duties must be approved by, and under the direction of, the City of Abbotsford; and
• the operator must pay all charges and fees which may be imposed by the FVRD for the material delivered to this facility.

### 2.5.1.2 Salish Disposal Ltd. Transfer Station

The Salish Disposal Ltd. Transfer Station is both a solid waste transfer station and a demolition, land clearing and construction (DLC) processing facility located at 34321 Industrial Way, [Lot 7, Plan 44328 Part NE1/4, section 3, Township 16, NWLD] Abbotsford. Salish Disposal Ltd. recycles steel, other miscellaneous metals (copper, aluminum, wire), wood waste, and cardboard (OCC). Waste from this facility may be disposed of at any authorized facility within the FVRD or any facility outside that meets, as a minimum, BC Environment’s Landfill Criteria for Municipal Solid Waste. Operating hours are 7:00 a.m. to 5:00 p.m. Monday through Friday, and 8:00 a.m. to 1:00 p.m. Saturday. The tipping fee at the transfer station is $66 per tonne (1999).

### 2.5.2 Pet Crematoria

#### 2.5.2.1 All Care Pet Services

All Care Pet Services is a private pet cremation service operating in Abbotsford at 304-31334 Peardonville Road. The legal description of the property is Lot A, Section 18, Township 16, NWD Plan NWP 8788. The facility operates two cremation retorts; one for private individual pet cremation and the larger unit used for communal pet cremation. It is estimated the daily volumes will be approximately 454.54 kgs within an 8-hour work day. The process reduces animal waste by up to 95 percent.
in weight and content which relates to 22.68 kgs per day. The sterile ash residue will be disposed of at the solid waste disposal facility servicing the City of Abbotsford. The facility will provide a service primarily to pet owners and veterinary hospitals.

2.5.2.2 Pet Memorial Services

Pet Memorial Services is a private cremation service operating at Lot 41, District Lot 73, Group, New Westminster District, Plan 54385, Unit D 44344 Yale Road West Chilliwack. The facility operates a single ADV200 Animal Crematory. It is estimated that the daily volumes will be approximately 410 kgs of animal carcasses within a 10 hour workday. The process reduces animal waste by up to 95% in weight to produce approximately 20 kgs of ash per day. The sterile ash residue, primarily made up of calcium, phosphorus and carbonate, will be disposed of at the disposal facility servicing the City of Chilliwack. The facility will provide a service primarily to pet owners and veterinary hospitals.
3.0 PLAN POLICIES

The following strategies and policies are based on Regional objectives and guiding principles, as stated in Sections 1.1 and 1.2. These policies will guide FVRD Staff in making decisions and providing recommendations to the Board. Wherever possible, these policies will be encouraged in member municipalities and other public and private organizations within the FVRD. The strategies will be implemented according to the schedules set out in Section 4.

3.1 REDUCTION & REUSE

* Senior Government Programs

The FVRD shall formally encourage Senior Government to develop and implement programs and policies which will encourage the reduction and reuse of waste materials. The priorities that FVRD considers paramount to achieving its waste diversion targets include the following programs which fall under Senior government jurisdiction:

* reduction and reuse communication and promotion, in the form of commercials, sticker campaigns, mail-outs, etc.;
* providing educational programs to encourage changes in values and beliefs regarding consumption of goods and the relationship to waste generation and disposal;
* education and technical assistance, primarily to the ICI and DLC sectors;
* waste exchange information, including expanding access and maintaining funding for the existing federal and provincial waste exchanges;
* increased emphasis on industry stewardship programs,
* promotion and expansion of environmental labelling on packaging: labelling for household hazardous products, labelling which identifies the percent packaging by weight, identification of disposal alternatives for the product or its packaging (recyclable/compostable);
* increased priority on expansion of the beverage container deposit legislation to include tetra paks and milk and milk substitute containers;
* removal or reduction of subsidies on virgin materials and barriers to the use of recycled materials;
* green taxes and environmental fees to encourage reduction of hard to dispose of or hazardous products, e.g., the “ecofee” on household paint;
* development of product standards, such as plastic recycling standards and minimum content requirements for products such as newspapers,
which will reduce the amount of material or virgin material which goes into certain wasteful products;
* provide guidelines for required waste audits and reduction plans for larger companies;
* reduction of packaging through initiatives such as the National Packaging Protocol, labelling and standards;
* increased emphasis of packaging programs on reduction and reuse, versus recycling; and
* increased funding for life cycle analysis (LCA) to enhance knowledge of environmentally superior products.

**Education/Promotion**

*FVRD shall develop and disseminate educational and promotional material to the public and to businesses on effective ways to reduce waste.* This will be done, when possible, with the assistance of local recycling and environmental groups, who have traditionally been responsible for this role. Educational packages will be disseminated through various media as appropriate for the specific issue, and may include: television; radio; newspapers; mail-outs; Welcome Wagons; real estate offices; local businesses (point of purchase); and other community groups. Educational programs will include the following information:

* advice on informed consumerism and landfill-friendly home practices, such as:
  - choosing products with little or no packaging,
  - choosing non-disposable items,
  - choosing longer-lasting items,
  - applying the **BUD** principle (Buy only what you need, Use only what you buy, and Dispose of what you cannot use in an environmentally responsible manner),
  - purchasing materials in bulk,
  - renting seldom used items,
  - refusing plastic shopping bags and carrying goods in a reusable bag owned by the consumer,
  - buying used items,
  - taking used items to reuse and repair stores, or charity organizations such as Salvation Army or Goodwill,
  - reducing junk mail deliveries to the home and office,
- choosing products based on the materials used in the product or its packaging (lighter weight, single materials, renewable resources, etc.), 
- leaving mowed grass on the lawn (with the use of a mulching mower); and 
- buying, renting or sharing backyard chipper/shredders in order to compost more material, 
- encouraging the use of garage sales, free shops, spring clean-up programs, etc.

* information about backyard composting: 
  - types and costs of bins, advantages and disadvantages, 
  - building instructions for homemade compost bins, and 
  - how to operate, trouble shooting;

* lists of reuse options for certain products and materials;

* lists of companies enabling reduction and reuse (scrap dealers, haulers, used product dealers, bottle depots, etc.);

* promotion of other FVRD reduction and reuse programs;

* promotion of both regional and private recycling and composting facilities operating within the Regional District;

* promotion of other FVRD waste management strategies;

* information on Provincially sponsored or instigated Post-Consumer Residuals Stewardship programs such as return facilities for used paint, solvents, pesticides, lead-acid batteries, tires, waste paint exchanges, used oil depots, etc.;

* tours of waste management facilities, such as recycling facilities, transfer stations or landfills; and

* a list of speakers on solid waste topics.
Fraser Valley Regional District

**FVRD shall work with the local school districts to promote and encourage curriculum changes with respect to waste management.** A liaison will work closely in all the schools for the first few years of implementation, developing programs and assisting in education. This activity is currently done to some degree by the Abbotsford/Mission Recycling Depot. The FVRD could either fund this and other educational efforts, or complement them with its own schooling programs.

**Material Bans and User-Pay Policies**

The FVRD shall implement, and encourage landfill and transfer station owners/operators to implement, further material bans or higher pricing structures for certain materials at waste disposal facilities, as waste reduction programs become available for those materials. Material bans will reflect the municipal and regional recycling and composting systems as implemented. Segregation areas at waste disposal facilities will also be encouraged for certain materials, such as batteries, tires, gyproc, scrap metals, etc. For some municipalities, such as Hope, recycling contracts include monetary incentives for the contractor to increase recycled quantities. This should be considered as a viable alternative to material bans.

For all areas serviced by a formal collection service, the ultimate goal is to have unified limits set on curbside waste and a user-pay "tag-a-bag" cost recovery mechanism in place for additional cans. Cans or bags without tags which surpass the size limit or the quantity limit would be left at the curb. In conjunction with this policy, an anti-littering and anti-back road dumping bylaw should be developed. This program could be implemented as a phased-in approach, since communities currently have different can limits in place. The ultimate bag limit will be reviewed, when necessary, by the participating areas, Councils, and the Board, to determine its suitability.

FVRD shall encourage other user pay systems within its boundaries. This would include mechanisms such as landfill tipping fee surcharges for contaminated loads, and charges for ICI waste audits and technical assistance, for example.

Businesses and institutions greater than a certain size, e.g. 100 employees, within the FVRD shall be required to submit waste reduction plans (WRP) on a five-year basis. This requirement may be enacted voluntarily or by bylaw. On each of the four years between WRP submissions, businesses will be required to submit progress reports which detail that company's success in...
reducing waste and in following the WRP. In some cases, an accompanying waste audit will assist in the waste reduction plan. FVRD will develop a manual or info kit on completing waste audits and waste reduction plans. The details of such a program would be presented to Municipal Councils and the Board for final policy approval.

**Other 3 R's Initiatives**

*The FVRD will work with staff at the Ministry of Environment and Ministry of Municipal Affairs to determine what authority, if any, regional and local government has to incorporate solid waste management requirements into the building and demolition process.* Legislative amendments may be required, and a feasibility study shall be done to determine staffing and enforcement requirements for future program implementation.

*The FVRD will look for opportunities to promote backyard composting through cooperative ventures with the private sector.* Such opportunities may involve the development of a composting garden, using materials donated by a landscaper, gardening store, and/or composter manufacturer, with promotion included in the Regional District's education program. The composting garden would demonstrate the various types of backyard and worm composting bins available, provide details on each, and give information and tips on building/operating bins, and the use of compost.

**FVRD shall establish a program for in-house reduction and reuse programs for all its offices and facilities.** This program will promote activities such as:

* use of ceramic mugs and other non-disposable dishes in place of styrofoam and paper products;
* use of reusable coffee filters;
* double-sided copying of reports and other office publications;
* use of electronic records and mailing;
* reduction of junk mail leaving and entering the office;
* smaller typeset for reports and correspondence; and
* reuse programs for paper.

*This program will also be encouraged in other government offices and private and public organizations within the FVRD through the education program.*
**FVRD** shall explore and encourage opportunities for private sector and non-profit society involvement in solid waste management.

**FVRD** shall encourage participation in materials and waste exchanges available to industry. Exchanges currently available include:

* BC Waste Exchange, Vancouver (through the RCBC Recycling Hotline)
* Pacific Materials Exchange (Spokane)
* Industrial Metals Exchange (Seattle)

### 3.2 RECYCLING

**FVRD** shall include education and promotion as high priorities to encourage participation in regional recycling programs. The mechanisms utilized will be similar to the reduction and reuse education and promotion programs, with content geared toward recycling.

**FVRD** shall develop an in-house procurement program for recycled content products for all its offices and facilities. The procurement program will utilize practices such as:

* purchasing paper with a stated minimum post-consumer recycled content;
* where recycled content paper is not available, report stock should be recyclable and, preferably, unbleached;
* purchasing waste bins of recycled content that are smaller than typically used;
* purchase plain paper fax machines instead of thermal paper fax machines.

Member municipalities and other private and public organizations within the FVRD will be encouraged to develop procurement programs similar to that of the Regional District.

**FVRD** shall encourage partnership with the private sector in the operation of recycling programs. This will foster a cooperative environment in which recycling can flourish. Tracking of materials and quantities in the recycling programs will be mandatory.

If it is felt necessary to increase participation, the incorporated member municipalities within FVRD will be encouraged to develop bylaws requiring participation in applicable public or private recycling and composting programs for all residents and businesses in the FVRD. This will be the
main mechanism of increasing participation in ICI and DLC recycling and composting.

**FVRD or its member municipalities shall develop a bylaw or policy requiring new multi-unit and/or multi-family developments (greater than four units in one complex or greater than four storeys) to include adequate space for integrated waste management.** This will also be a business license requirement for new commercial buildings. The space shall include areas for storage of waste, recyclables and compostables.

**FVRD, through its member municipalities, shall make every effort to recycle as many materials as possible, to the extent that economics do not prevent their collection and processing.** Based on long term market viability, these materials may include the following:

* all grades of paper including cardboard;
* tin-plated steel cans;
* aluminum beverage cans;
* glass, in colours appropriate to the recycling market; and
* certain plastics, e.g. HDPE and PET, as the markets permit.

Other materials will be accepted as markets become available or are strengthened. These may include the following:

* additional plastic types;
* concrete and asphalt;
* lumber;
* textiles; and
* rubber.

No materials will be accepted by a recycling program within the FVRD until a legitimate market has been secured for that material. This will prevent the costly storage and ultimate disposal of large quantities of “recyclable” materials without markets.

**The FVRD, in cooperation with private sector recyclers, shall regularly search for new and better markets for recyclable materials.** This may be done as a marketing cooperative with adjacent regional districts. Marketing may be done through recycling brokers or direct to markets, as appropriate for each material.
The member municipalities of the FVRD will be responsible for implementing the recycling programs under their jurisdiction, as set out in this Plan. The FVRD will be responsible for implementing the recycling programs for the Electoral Areas. Each governmental body will be entrusted to divert as much waste as is economically feasible from landfilling. The recycling goals of various areas of the Regional District are described below, and summarized in Table 3-1.

3.2.1 District of Mission

The District of Mission will continue curbside bluebag collection of recyclables for urban residents. Bluebag recyclables will continue to be sent to the AMRD recycling facility, with AMRD determining the materials and markets used. Additional recycling will be encouraged through continued disposal bans and enhanced segregation of certain materials at the Minnie's Pit landfill. Private sector recycling in the ICI and DLC sectors will be encouraged through disposal bans. In addition, the FVRD and the District of Mission, in cooperation with industries, will undertake an aggressive ICI market development study to enhance the amount and type of ICI materials that can be recycled. The extent of this program will depend on how successful it is at increasing the diversion of materials through ICI recycling. If this market development is not productive, local legislation will be developed to require ICI waste minimization.

3.2.2 City of Abbotsford

The City of Abbotsford will continue curbside bluebag collection of recyclables for all single family dwellings, both urban and rural. Bluebag recyclables will continue to be sent to the AMRD recycling facility, with AMRD determining the materials and markets used. Additional recycling will be encouraged through continued and enhanced segregation of certain materials at the Matsqui Transfer Station.

Private sector recycling in the ICI and DLC sectors will be encouraged through continued disposal bans at the Matsqui Transfer Station. Pickup of office paper will continue through the recycling facility. If this program is not effective enough, local legislation may be developed to require ICI participation in recycling.
3.2.3 **City of Chilliwack**

The City of Chilliwack will continue the green bin recycling program now in place, with expansion and enhancement as required by demand. This system could be used as a model for drop-off programs in the rest of the Regional District. Private refuse collectors have responded to material bans at the landfill by incorporating bluebag recyclables collection into their list of services.

ICI and DLC recycling will continue to be accomplished through private means, and encouraged through the material bans at the Bailey Road landfill.

3.2.4 **District of Hope, Electoral Area B**

The residents of the District of Hope and Electoral Area B will continue to be served by curbside collection of bluebag recyclables. Expansion and improvement of this program will be ongoing process.

3.2.5 **District of Kent, Village of Harrison Hot Springs, Electoral Areas D and E**

The Village of Harrison Hot Springs will continue the selective curbside collection of recyclables. The District of Kent and the two electoral areas will improve on the existing blue bin system, either by improving the drop-off type and locations, or by incorporating a curbside collection system.

3.2.6 **Electoral Area A**

The communities of North Bend and Boston Bar in Electoral Area A will be served by a curbside collection system for recyclables. In the short term, this will be contracted out to a private refuse collection contractor.

3.2.7 **Electoral Area C**

Electoral Area C will continue with the bluebag drop-off program in place, with expansion and upgrades as needed.
<table>
<thead>
<tr>
<th></th>
<th>FVRD</th>
<th>District of Mission</th>
<th>Electoral Area F &amp; G</th>
<th>City of Abbotsford</th>
<th>Electoral Area II</th>
<th>District of Chilliwack</th>
<th>District of Hope, Electoral Area B</th>
<th>Kent, Harrison IS, Electoral Areas D, E</th>
<th>Electoral Area A</th>
<th>Electoral Area C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recycling Incentives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education &amp; promotion</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-house procurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Private sector partnership</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycling requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building code amendments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New market research</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinate with other areas</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertise other recycling opps</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recycling Programs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curbside Bluebag</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drop-off Bluebag</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separated Drop-off</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
</tr>
</tbody>
</table>

* Education provided by contractor
3.2.8 Electoral Areas F & G

The existing drop-off system will continue in Electoral Areas F & G, with materials being taken to the AMRD recycling facility. The location and type of bins will be reviewed to determine any potential improvements which could be made. Recycling bins will be made available at both rural transfer stations. In the case of the Athey Road Transfer Station, this may require relocation to provide the space for recycling bins.

3.2.4 Electoral Area H - Sumas Mountain

The residents of Sumas Mountain will continue to drop off recyclables at the AMRD recycling facility. If Area H is annexed with the City of Abbotsford, it may be incorporated into the bluebag curbside collection program operated on behalf of the City. This should be done only with the support of Sumas Mountain residents.

FVRD will encourage any parks and resorts to include on-site drop-off facilities for recyclable materials, to be delivered to a regional recycling facility.

FVRD will regularly investigate opportunities to coordinate joint processing and shipment of recyclable materials with other regional districts.

FVRD will include alternative recycling opportunities, operated by private enterprise or other groups, in public education material. A listing of valid private waste management companies will be supplied on request.

The FVRD, or its member municipalities, may need to upgrade recycling systems if necessary to attain the projected waste diversion targets or improve cost effectiveness. If the system enhancement is significantly different (i.e. more costly or less user friendly) than the existing programs in the Regional District, a Plan amendment and full public review may be required.
3.3 COMPOSTING

FVRD shall include education and promotion as high priorities to encourage participation in the regional composting programs. The mechanisms utilized will be similar to the reduction and reuse education and promotion programs.

FVRD shall develop an in-house procurement program for compost for all its building and facility landscaping needs. The procurement program will utilize compost from regional composting programs for regional parks and other regional sites.

Member municipalities and other private and public organizations within the FVRD will be encouraged to develop composting procurement programs similar to that of the Regional District.

FVRD shall continue to encourage partnership with the private sector in the operation of composting programs. This will foster a cooperative environment in which composting can flourish. Tracking of material quantities will be mandatory.

If it is felt necessary to increase participation, the incorporated member municipalities within FVRD shall develop bylaws requiring participation in regional and external composting programs for all businesses in FVRD. This will be the main mechanism of increasing participation in ICI and DLC composting.

FVRD, through its member municipalities, shall make every effort to compost as much material as possible, to the extent that economics do not prevent their collection and processing.

FVRD composting programs will target as many organic materials as possible, while minimizing odour problems. Materials to be targeted include residential food waste (in backyard bins and centralized in-vessel composting systems); commercial food waste (in-vessel); yard waste including leaves, trimmings, brush and grass; wood waste from demolition and renovation projects; and land clearing debris.

The FVRD shall continue to provide, to all interested residents, backyard composting bins at a subsidized cost, subject to continued funding opportunities provided by the Provincial government. FVRD will take
advantage of any funding opportunities provided by the provincial government and provide a further subsidy. The bin cost would ideally be split in even thirds between senior government, regional district, and resident. FVRD staff will research existing bin technology to determine the most cost effective bin for distribution, while ensuring that the bin design accounts for rodent control and user ease. FVRD and/or municipal staff will arrange storage and distribution of the bins as appropriate to ensure the greatest participation in the program. Educational/informational packages will be distributed with the bins, and participants will be referred to the compost manufacturer with any problems.

Except for backyard composting programs, the member municipalities of the FVRD will be responsible for implementing the composting programs under their jurisdiction, as set out in this Plan. The FVRD will be responsible for implementing composting programs for the Electoral Areas. Each governmental body will be entrusted to divert as much as economically feasible from landfilling. The composting goals of various areas of the Regional District are described below, and summarized in Table 3-2.

3.3.1 District of Mission

The District of Mission will continue curbside collection of compostables, on the same schedule as recyclables collection, for urban residents. Materials that are targeted in the composting program are organic garden waste, yard waste, kitchen waste and contaminated papers. The materials from this program are taken to the Ferndale Institution. The institution is a federal corrections facility located in Mission at 33737 Dewdney Trunk Road, for in-vessel composting. Open windrows are used for curing the in-vessel product and for composting “clean green” yard and garden wastes.

Private sector composting in the ICI and DLC sectors will be encouraged through disposal bans at the Minnie’s Pit landfill.

3.3.2 City of Abbotsford

The City of Abbotsford will continue to encourage user pay systems and support current private enterprise initiatives in the collection of yard and garden trimmings. Yard composting initiatives will continue and all interested residents will have access to subsidized backyard composters. The City will continue to operate a yard and garden waste drop off site.
located on Valley Road just west of the Recycling Depot. A fee is charged for this service. Additional composting will be encouraged through continued and enhanced material bans at the Matsqui Transfer Station.

Private sector composting in the ICI and DLC sectors will be encouraged through continued disposal bans at the Matsqui Transfer Station.

3.3.3 District of Hope and Electoral Area B

The residents of the District of Hope and Electoral Area B will continue to have curbside collection of compostable materials, with composting and wood chipping activities as described in Section 2.3.7. Expansion and improvement of this program will be an ongoing process.

3.3.4 Other Areas (City of Chilliwack, District of Kent, Village of Harrison Hot Springs, Electoral Areas A, C, D, E, F, G, and H)

All areas outside of Mission, Abbotsford, Hope and Electoral Area B will compost primarily through backyard composting and drop-off means. Most areas have reasonable access to a composting facility where yard waste can be dropped off. The existing sites used for yard waste drop-off include the Valley Road site in Abbotsford, The Answer in Abbotsford, Ag-Gro (Pit 43) in Chilliwack, the Bailey Road landfill, Minnie’s Pit landfill and the Hope landfill. In addition to these sites, a site will be developed in the vicinity of Agassiz and Harrison Hot Springs for residents and businesses on the north shore of the Fraser River.

Municipalities that have not already done so, will be encouraged to implement more sophisticated, socially accepted and economically feasible composting systems. Public input shall be sought for any change in composting services, primarily for the siting of new composting facilities.

Any new composting facility proposing to operate within the boundaries of the FVRD, which receives compostables originating from producers of MSW, will require a Plan amendment subject to Regional District and MELP requirements. One requirement of the Plan amendment will be that the facility include provisions for effective odour control, such that complaints from neighbouring property owners are not received.
### TABLE 3-2
#### SUMMARY OF COMPOSTING GOALS

<table>
<thead>
<tr>
<th>Composting Incentives</th>
<th>FVRD</th>
<th>District of Mission</th>
<th>Electoral Areas F, G</th>
<th>City of Abbotsford</th>
<th>Electoral Area H</th>
<th>District of Chilliwack</th>
<th>District of Hope, Electoral Area B</th>
<th>District of Hope, Electoral Area C</th>
<th>Kent, Harrison HS, Electoral Areas D, E</th>
<th>Electoral Area A</th>
<th>Electoral Area B</th>
<th>Electoral Area C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education &amp; promotion</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>In-house procurement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Private sector partnership</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Composting requirements</td>
<td>Y</td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Building code amendments</td>
<td>Y</td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Coordinate with other areas</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Advertise other composting apps</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Demonstration Garden &amp; Hotline</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Composting Programs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Backyard Composting</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Drop-off Composting</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Curbside Composting Collection</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

* Grass clippings and leaves
The FVRD, or its member municipalities, may need to implement more sophisticated composting systems, if this is deemed necessary to attain the projected waste diversion targets. If the system enhancement is significantly different (i.e. new facilities required), a Plan amendment and public review may be required, subject to Section 4.7.

FVRD will regularly investigate the possibility of coordinating with other adjacent regional districts for joint processing of compostable materials.

3.4 ENERGY RECOVERY

This Regional District discourages the incineration of MSW due to the sensitivity of the air shed. Proposals for the recovery of energy from an incineration process could be accepted by this Regional District; however, no proposal would be implemented without careful consideration of its impacts upon the air shed both from an emission quality perspective and its overall effect on total air shed quality.

Private sector proposals for incineration, energy recovery or co-generation facilities within FVRD boundaries may require a Plan amendment, subject to Section 4.7. Public input will be received on any proposals before approval.

With any proposed incineration/energy recovery/co-generation project, the safe and environmentally sensitive transportation and disposal of ash and the quality of the discharged gases must be considered paramount, and meet all applicable MELP standards.

3.5 RESIDUALS MANAGEMENT

The FVRD is considering exercising the authority provided by Section 19 of the Waste Management Act (1992) to control the management of municipal solid waste and recyclable material within its boundaries through the issuance of Waste Stream Management Licenses, Hauler Licenses and Recycler Licenses. This authority will only be exercised with the support of a majority of FVRD member municipalities and as a result of Board approval through resolution. Prior to the implementation of Waste Stream Management Licensing, the FVRD will hold extensive public and stakeholder consultation to determine the level of acceptability to site owners, waste haulers and other parties involved. The purpose of implementing such authority is to ensure that:
• Waste and recyclables are disposed of, or processed by, Plan authorized facilities;
• New or private facilities operate in accordance with the Plan through either an Operational Certificate (as issued by MELP) or license (as issued by the FVRD); and
• The FVRD is better able to track waste material quantities, increasing the accuracy of Plan Monitoring activities.

The primary focus will be to curb waste migration to disposal facilities not authorized in the Plan and/or facilities operating illegally. Licensing will also ensure that recyclables, collected through the City of Abbotsford’s soon to be adopted bylaw (governing the collection of recyclables from multi-family dwellings), will be processed at the Abbotsford/Mission Recycling Depot. If implemented, licensing fees will reflect administrative costs only. Sample draft licenses are included in Appendix E to this Plan.

In incorporated areas, the collection of waste and recyclables shall remain the responsibility of the member municipalities in the FVRD, unless a regional system is specifically requested by the municipalities. Where warranted, the FVRD shall be responsible for providing collection in electoral areas, through the development and issuance of public tenders.

Depending on program availability through Municipal and regional programs, bulky items will continue to be accepted at transfer stations and active MELP-permitted municipal landfills within the FVRD. Bulky items will be separated from other waste at the landfill or transfer station for potential salvage.

The existing disposal arrangement between the City of Abbotsford and the GVRD will continue at the discretion of the City. Possible long term options include export to another facility (i.e. Minnie’s Pit in the District of Mission, Bailey Road in Chilliwack or the Rabanco site in Washington State), the development of a new site within the FVRD area, or the construction of an alternate technology, such as the mechanical sorting of household garbage with all contained organics being composted. Implementation of a new disposal option would require a Plan amendment subject to Regional District and MELP requirements, endorsement by the relevant Councils, and public consultation.

Existing landfills in FVRD will be utilized to the extent allowed by physical capacity or environmental impacts. Closure plans will be submitted to MELP for all existing landfills. The owner or OC/permit holder of each landfill will be
responsible for the operation and closure of the landfill in accordance with the **BC Landfill Criteria for Municipal Solid Waste** (Landfill Criteria). Landfills that were closed prior to the criteria being adopted do not need to be upgraded to the Landfill Criteria, however should an environmental problem occur, the owner and/or operator of the site will be required to address the problem.

**Responsibility for existing residual management facilities will remain with the existing owner/operator, unless the owner/operator specifically requests FVRD participation.** This includes expansion of the Minnie’s Pit landfill, which will be undertaken by the District of Mission in the future. This expansion must be in compliance with the Landfill Criteria.

The FVRD recognizes that revenues from tipping fees are required for closure and operating costs, however, there may be a need in the future to attempt to standardize tipping fees. This would only be done through consultation and agreement with member Municipalities and discussion by the Board. This may exclude the Matsqui transfer station, for which tipping fees are set by the GVRD, and municipally operated landfills for which the tipping fees reflect economic factors of the area.

**Operating hours for any landfills and transfer station sites shall be maintained or established to maximize service while minimizing costs.** In addition, landfill and transfer station sites shall be attended to ensure proper disposal within the site and to guard against disposal of banned materials.

**Regional landfills and transfer stations will accept only municipal solid waste. The acceptance of industrial waste from time to time is at the discretion of the MELP Regional Waste Manager and the Facility owner/operator.** Best efforts will be made to prevent household hazardous waste, untreated biomedical waste and special waste from being disposed of at any disposal facilities identified within this Plan. Materials which have other acceptable means of handling (passenger and light truck tires, batteries, paint, etc.) shall not be accepted for landfilling at regional disposal facilities. Until provincial procedures are developed for treating biomedical waste, biomedical waste may be accepted at regional facilities only if it has been rendered safe to be placed in a landfill and/or disposal container. Deposition of dead animals at regional facilities should be avoided where feasible alternatives exist. Where alternatives do not exist, carcasses must be disposed of in a manner acceptable to MELP and the owner/operator. Materials not accepted shall be clearly marked on signs at the facility entrance.
Subject to the approval of the owner of the landfill, soil, excluding Special Waste as defined by the Special Waste Regulation, may be accepted at landfills within the FVRD for use as daily and intermediate cover. Furthermore, soil may be used for final cover provided that the soil does not contain any substance exceeding the applicable numerical soil standard for the intended end use of the land as defined by the closure plan of the landfill. The applicable numerical soil standard is defined in the Contaminated Sites Regulation.

Where applicable, material bans will be evaluated annually to determine their effectiveness, and the feasibility of new bans.

The FVRD will support the concept of true industry stewardship with respect to the handling and recycling of household hazardous products and difficult-to-dispose wastes. The Regional District will cooperate with industry groups and the Province to develop drop-off facilities for problem wastes. The drop-off system should be fully funded by industry, and the Regional District absolved of any liability with respect to handling, storage, transportation and disposal of materials. Industry associations will be responsible for the transportation, marketing, and/or disposal of any materials collected. Although it is recognized that regional facilities accepting multiple materials provide some advantages over a return-to-retail system for individual materials, the ultimate responsibility for handling and disposal should rest with the producers and manufacturers of those materials.

No products which utilize ozone depleting substances (ODS) shall be accepted at any landfill or transfer station in FVRD without previous removal of those ODS by certified technicians or authorized ODS removal companies. An exception will be made if the facility has qualified personnel and removes ODS on the premises or has a contract with a qualified firm for ODS removal. FVRD may develop stickers to be used by authorized ODS removal companies to indicate the absence of ODS.

FVRD will support the Province in developing a responsible system for treating biomedical waste. The ultimate responsibility for biomedical waste shall rest with the institutions generating the waste and any company contracted by the Province to treat the waste.

In accordance with the Special Waste Regulations of the Waste Management Act, special waste shall be disposed of in a licensed special waste landfill (or handled in a manner specified by any subsequent legislation, criteria or guideline as may be applicable). The responsibility of
ensuring proper disposal of special waste shall rest ultimately with the generator of the special waste.

**FVRD and MELP will cooperate in DLC waste management by coordinating meetings between all stakeholders on the issue.** To reduce quantities of land clearing debris, the FVRD and local municipalities should explore policies in their OCPs which would preserve some of the trees on the larger development sites. DLC waste quantities and types will be identified and a toolkit created for developers that identifies waste reduction and recycling options in the FVRD.

Landfills and composting facilities covered under the Solid Waste Management Plan shall be operated, closed and monitored in accordance with *B.C. Environment's Landfill Criteria for Municipal Solid Waste* (June 1993) and the *Production and use of Compost Regulation* respectively. The FVRD, in consultation with member municipalities, prepared a report indicating which landfills and composting facilities do not comply with the above noted documents. The report included details of specific deficiencies, remedial action proposed and a schedule for completion of the remedial action. Operational certificates incorporate the timelines indicated in this report. Table 3-3 lists the active landfills and composting facilities in the regional district.

A draft Landfill Action Plan, which outlines the common and site specific nature of operational certificate information, is contained in Appendix A.
Table 3-3: Authorized Major Disposal and Composting Facilities in the Regional District

<table>
<thead>
<tr>
<th>OWNER OR OPERATOR</th>
<th>PERMIT #</th>
<th>NAME/LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disposal Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City of Chilliwack</td>
<td>PR-1822</td>
<td>Bailey Rd - Matheson Rd</td>
</tr>
<tr>
<td>Cultus Lake Park Board</td>
<td>PR-5984</td>
<td>Cultus Lake</td>
</tr>
<tr>
<td>District of Mission</td>
<td>PR-2043</td>
<td>Minnie's Pit - 32000 Dewdney Trunk Road</td>
</tr>
<tr>
<td>City of Abbotsford</td>
<td>PR-8090</td>
<td>Valley Road Emergency Cell</td>
</tr>
<tr>
<td>GVRD</td>
<td>n/a</td>
<td>Matsqui Transfer Station, Abbotsford</td>
</tr>
<tr>
<td>District of Hope</td>
<td>MR-15675</td>
<td>Hope Landfill - No. 1 Highway</td>
</tr>
<tr>
<td>FVRD</td>
<td>PR-7763</td>
<td>Chaumox Road Landfill - North Bend</td>
</tr>
<tr>
<td>Mr. Lloyd Brown</td>
<td>pending</td>
<td>Bradner Road Select Waste Landfill, Abbotsford</td>
</tr>
<tr>
<td>Salish Disposal Ltd.</td>
<td>n/a</td>
<td>Salish Transfer Station, Abbotsford</td>
</tr>
<tr>
<td>Ministry of Attorney-General</td>
<td>PR-2989</td>
<td>Boulder Bay Camp</td>
</tr>
<tr>
<td>Ministry of Attorney-General</td>
<td>PR-2990</td>
<td>Stave Lake Camp</td>
</tr>
<tr>
<td><strong>Composting Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ag-Gro Composting Systems</td>
<td>n/a</td>
<td>Pit 43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parr Road - Chilliwack</td>
</tr>
<tr>
<td>City of Abbotsford</td>
<td>PR-7232</td>
<td>33400 Valley Road</td>
</tr>
<tr>
<td>The Answer Garden Products Ltd.</td>
<td>n/a</td>
<td>27715 Huntingdon Road - Abbotsford</td>
</tr>
</tbody>
</table>

* Note: All disposal facilities within the jurisdiction of the FVRD (including those transfer stations shipping waste outside of the FVRD), are subject to disposal fees as specified in FVRD Bylaw No. 0327, 1999.
4.0 IMPLEMENTATION

Implementation of Plan strategies and initiatives, as stated in Section 3, are described in detail in this section. Considerations ensuring successful plan implementation of Regional objectives are discussed below and include the following:

* diversion targets;
* implementation schedule;
* administration, jurisdiction and responsibility;
* levels of staffing;
* Plan monitoring and review;
* waste diversion contingency plans;
* a process for adding new waste management facilities;
* dispute resolution procedures; and
* Plan flexibility.

Additionally, many existing solid waste management programs are implemented through fixed-time contracts with member municipalities. These programs contribute greatly to the overall success of the primary Plan objective, that the per capita amount of waste requiring landfilling be reduced by 50% by the year 2000 (baseline year 1991).

4.1 DIVERSION TARGETS

At the outset of Plan implementation, it is important that there be specific diversion methods established for each material class and type in the waste stream. Table 4-1 indicates the intended FVRD objectives for various classes of material. The entire waste stream will be reduced and reused to the greatest extent possible, with some wastes targeted more than others (e.g. packaging waste, such as paper products and plastics). Materials with strong recycling markets will be recycled, with other materials being included as markets expand. Depending on the area, recycling could mean curbside collection of bluebag recyclables, or drop-off depots for either commingled or separated recyclables. Privately owned and operated recycling depots are listed in Appendix D. The primary organics (food, yard and wood waste) will be composted through a combination of residential backyard composting, centralized yard waste windrow composting and centralized in-vessel composting. Food and other putrescible wastes shall only be composted at in-vessel systems with adequate odour control to minimize odour complaints.

Any materials not handled through reduction, reuse, recycling or composting will be landfilled. The Plan Monitoring Advisory Committee (PMAC) will review these waste stream targets annually to identify potential modifications that reflect changes in markets or economics.
<table>
<thead>
<tr>
<th>Waste Component</th>
<th>Residential</th>
<th>ICI</th>
<th>DLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Newspaper</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Fine Paper</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Boxboard</td>
<td>reduce, reuse, recycle, compost</td>
<td>reduce, reuse, recycle, compost</td>
<td>n/a</td>
</tr>
<tr>
<td>Old Corrugated Cardboard</td>
<td>reduce, reuse, recycle, compost</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Mixed Paper/Magazines</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Glass</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Ferrous Metal</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Non-Ferrous</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>HDPE</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>PET</td>
<td>reduce, reuse, some recycled</td>
<td>reduce, compost</td>
<td>n/a</td>
</tr>
<tr>
<td>Other Plastic</td>
<td>reduce, compost</td>
<td>reduce, compost</td>
<td>n/a</td>
</tr>
<tr>
<td>Food Waste</td>
<td>reduce, compost</td>
<td>reduce, compost</td>
<td>n/a</td>
</tr>
<tr>
<td>Yard Waste</td>
<td>reduce, reuse, salvage</td>
<td>reduce, reuse, salvage</td>
<td>n/a</td>
</tr>
<tr>
<td>White Goods</td>
<td>reduce, reuse, recycle</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Bulky</td>
<td>reduce, reuse, recycle, compost</td>
<td>reduce, reuse, rescue, compost</td>
<td>n/a</td>
</tr>
<tr>
<td>Residential DLC</td>
<td>reduce, reuse, recycle, compost</td>
<td>reduce, reuse, recycle, compost</td>
<td>n/a</td>
</tr>
<tr>
<td>Wood</td>
<td>reduce, return to retail</td>
<td>reduce, return to retail</td>
<td>n/a</td>
</tr>
<tr>
<td>HIHW</td>
<td>various</td>
<td>various</td>
<td>n/a</td>
</tr>
<tr>
<td>Other Combustibles</td>
<td>various</td>
<td>various</td>
<td>n/a</td>
</tr>
<tr>
<td>Other Non-Combustibles</td>
<td>n/a</td>
<td>reduce, reuse, recycle, compost</td>
<td>n/a</td>
</tr>
<tr>
<td>Mixed Wood DLC</td>
<td>n/a</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Mixed Soil</td>
<td>n/a</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Roofing &amp; Unclassified</td>
<td>n/a</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Concrete &amp; Asphalt</td>
<td>n/a</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Shingles and Brush</td>
<td>n/a</td>
<td>reduce, reuse, recycle</td>
<td>n/a</td>
</tr>
<tr>
<td>Other DLC</td>
<td>n/a</td>
<td>reduce, reuse, recycle, compost</td>
<td>n/a</td>
</tr>
</tbody>
</table>

n/a = not applicable
4.2 IMPLEMENTATION SCHEDULE

To reach the FVRD 51.5% waste diversion goal by the target date of 2000, it is necessary to implement Plan strategies well in advance of the year 2000. Many of the recycling and composting programs will be expanded or initiated within the first two years. Other strategies, such as public education and backyard composting, will be phased in immediately, within the first year. The proposed implementation schedule is outlined below.

* **Reduction and Reuse:** Regional District reduction and reuse initiatives will be implemented primarily in the first two years of the Plan (1996 and 1997). A position of Waste Management Coordinator will be created and staffed to coordinate all diversion and residuals management initiatives. The highest reduction and reuse priorities, to be completed in the first year, will be:

  * encouraging senior government to implement reduction and reuse programs;
  * initiating FVRD public education and promotion;
  * encouraging material bans at the Matsqui Transfer Station and Bailey Road, Minnie’s Pit and Hope landfills;
  * discussion of unified residential can limit bylaws for the member municipalities with collection services;
  * planning and developing a program for increased waste management awareness in the local school districts; and
  * planning and preliminary work for a compost demonstration program for selected areas in the FVRD;

During the next four years, the following initiatives should be completed:

  * continued FVRD education and promotion;
  * implementation of can limit bylaws for areas where garbage collection is provided as a local or municipal source;
  * implementation of a school waste management program;
  * requirements for waste reduction plans and/or waste audits for businesses;
  * a feasibility study for building/demolition waste reduction and management;
* further landfill bans; and
* a feasibility study for a waste facility and haulers licensing system.

The proposed five year timeline for the implementation of reduction and reuse initiatives is described in Table 4-2.
### TABLE 4-2

**RECOMMENDED WASTE MANAGEMENT SYSTEM - FIVE YEAR FRASER VALLEY REGIONAL DISTRICT REDUCTION AND REUSE**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction &amp; Reuse plus administration</td>
<td>* Initiate Regional Reduction &amp; Reuse 3R program</td>
<td>* Expanded Regional 3R program</td>
<td>* Full Regional 3R program with increased effectiveness</td>
<td>* Full Regional 3R program with increased effectiveness</td>
<td>* Full Regional 3R program with increased effectiveness</td>
<td>* Re-evaluate 3R program in formal Plan review</td>
</tr>
<tr>
<td></td>
<td>* Review user pay programs and develop standardization plan</td>
<td>* Continued regional education</td>
<td>* Expired waste reduction plans and waste audits</td>
<td>* Expanded senior government programs</td>
<td>* Expanded senior government programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* FVRD education and promotion</td>
<td>* Further landfill bans at smaller sites</td>
<td>* Conduct DLC management feasibility study</td>
<td>* Conduct IC&amp;I waste reduction feasibility study</td>
<td>* Conduct IC&amp;I waste reduction feasibility study</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Development of school education/promotion program</td>
<td>* Procurement program</td>
<td>* Produce waste audit and waste reduction kits</td>
<td>* Conduct IC&amp;I waste reduction feasibility study</td>
<td>* Conduct IC&amp;I waste reduction feasibility study</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Material bans at major landfills for all recyclables</td>
<td>* Begin to implement unified user-pay strategies</td>
<td>* Implement fees and fines</td>
<td>* Implement IC&amp;I waste reduction feasibility study</td>
<td>* Implement IC&amp;I waste reduction feasibility study</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Formal encouragement of senior government strategies</td>
<td>* Commission compost garden</td>
<td>* Commission compost garden</td>
<td>* Conduct IC&amp;I waste reduction feasibility study</td>
<td>* Implement IC&amp;I waste reduction feasibility study</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Seek partnerships with other jurisdictions</td>
<td>* Expanded senior government programs</td>
<td>* Full Regional 3R program</td>
<td>* Full Regional 3R program</td>
<td>* Full Regional 3R program with increased effectiveness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Limited enforcement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Continue waste exchange funding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Limited senior government programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Recycling and Composting: Every attempt will be made to improve and enhance existing recycling and composting programs. Some areas, including Electoral Area A and the Village of Harrison Hot Springs, should receive curbside recycling collection in the first year. Also in the first year, existing drop-off programs will be evaluated and, where necessary, planning and design for improved programs will be initiated. Adequate existing programs will be expanded into areas which currently do not have access to recycling.

The Regional District will continue to purchase composters in cooperation with member municipalities upon request. These composters will be made available to residents at a subsidized rate. The rate at which bins are purchased will determine the size of subsequent orders. For any subsequent bin orders, the FVRD may choose to contract with retailers (nursery, hardware) to further supply bins to residents. This backyard composting program will be complemented with a public education program. In addition, an emphasis will be made on encouraging ICI and DLC sector recycling and composting, possibly through the passing of applicable by-laws and/or disposal bans.

A pilot yard waste collection program should be initiated in Abbotsford in 1997. The pilot program should involve alternating collection of waste/recyclables and waste/yard waste for 6 months from May through October, serving approximately 20% of the population. Based on the success of the pilot program, the full scale program should be initiated in 1998. A contract will be tendered with a facility which can take the yard waste material for windrow composting. Full scale implementation of yard waste composting will require potential expansion of the recycling facility and other infrastructure requirements (such as the purchase of more dual compartment trucks). This expansion will include public consultation, and a possible Plan amendment.

A central windrow yard waste/DLC wood waste composting facility will be considered through a composting feasibility study in the north shore area, in the vicinity of Agassiz and Harrison Hot Springs. Drop-off composting will continue to be encouraged at the existing facilities, which include the Valley Road landfill, The Answer, Pit 43 (Ag-Gro), and Minnie's Pit and Hope landfills.

The proposed five year timeline for the implementation of recycling and composting programs is described in Table 4-3.
TABLE 4-3
RECOMMENDED WASTE MANAGEMENT SYSTEM - FIVE YEAR CHRONOLOGY
FRASER VALLEY REGIONAL DISTRICT
RECYCLING AND COMPOSTING

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling</td>
<td>-continue blue bag curbside recycling in Abbotsford, Hope, Mission and Electoral Area B -continue drop-off recycling in Chilliwack, Kent and Electoral Areas C,D,F,G &amp; H -review type and location of drop-off bins -design/Implement recycling initiatives: ● Education/promotion ● Procurement programs ● Material bans ● ICI &amp; DLC recycling incentives ● Implement curbside blue bag recycling in Harrison Hot Springs and Electoral Area A -expand drop-off programs in Electoral Areas D, E, F, G &amp; H -inclusion expansion of Harrison Mills T.S. to accept recyclables -review Kent recycling, design new system -review Althea Rd. T.S. Upgrade to accept recyclables</td>
<td>-continue blue bag and drop-off recycling, expanding as necessary -recycling incentives: ● Education/promotion ● Recycled content ● Building code amendments ● Required recycling service by haulers (if necessary)</td>
<td>-continue blue bag and drop-off recycling, expanding as necessary -recycling incentives: ● Education/promotion ● Recycled content ● Building code amendments ● Required recycling service by haulers (if necessary)</td>
<td>-no change ● R &amp; R = reduction &amp; reuse ● ICI = industrial/commercial/institutional waste ● DLC = demolition/land clearing/construction waste ● T.S. = transfer station -no change -expanded materials as technology allows</td>
<td>-status quo</td>
<td>Status quo -re-evaluate recycling program as part of formal Plan review</td>
</tr>
<tr>
<td>Composting</td>
<td>-continued compost bin distribution by PVRD -continued yard waste collection in Hope, Mission and Electoral Area B -continued drop-off composting in Hope &amp; Abbotsford -design/Implement composting incentives: ● Education/promotion ● Procurement programs ● Material bans ● ICI &amp; DLC composting incentives ● Implement composting, pilot yard waste collection for Abbotsford</td>
<td>-continue backyard, collection and drop-off programs -composting incentives: ● Education/promotion ● Building code amendments ● Required composting service by haulers (if necessary) -implement yard waste collection pilot in Abbotsford</td>
<td>-continue backyard, collection and drop-off programs -composting incentives: ● Education/promotion ● Building code amendments ● Required composting service by haulers (if necessary) - Increased DLC effectiveness</td>
<td>-no change</td>
<td>-status quo</td>
<td>Status quo -re-evaluated composting program as part of formal Plan review</td>
</tr>
</tbody>
</table>

R & R = reduction & reuse  ICI = industrial/commercial/institutional waste  DLC = demolition/land clearing/construction waste  T.S. = transfer station
**Illegal Dumping:** Illegal dumping is the disposal of solid waste in locations other than Plan permitted sites. These sites include all facilities involved in the handling of municipal solid waste or recyclable materials, as currently authorized in the Plan (Section 2.4). Illegal dumping is a cross-jurisdictional problem, which tends to occur more frequently in rural and electoral areas. The Regional District will prepare an Illegal Dumping Toolkit to assist government and other interested parties with the prevention of illegal dumping and the cleaning up of illegal dump sites. The Toolkit will include:

- Public awareness and education programs;
- A review of current Federal, Provincial and local Legislation and how this legislation can be used in the prevention of illegal dumping;
- A generic illegal dumping bylaw following a review of existing bylaws;
- Standard letters to be sent to illegal dumpers;
- A flowchart illustrating a strategy to deal with various types of illegal dumping, and
- A generic program to measure the success of the strategy.

Prior to distribution, the Illegal Dumping Toolkit will have the input of Provincial, Federal and local government, as well as any other interested stakeholders. The projected completion date is the year 2000.

**Residuals Management:** Existing FVRD disposal facilities may be utilized as long as possible. As landfills within the Regional District reach capacity, waste originally destined for closed sites will be directed to longer-lifespan landfills. This redirection is subject to Council approval by the member municipality operating the landfill, and review and approval by the Board. In the first Plan review, in five years, the remaining regional landfill capacity and the need for additional capacity will be investigated. Options include the potential to develop a new single landfill within the FVRD, or exporting to another facility outside of FVRD. In addition, the City of Abbotsford may need to react quickly to any changes in the existing GVRD arrangement to use the Matsqui Transfer station.

The proposed five year timeline for the implementation of residuals management activities is described in Table 4-4.
**TABLE 4-4**

**RECOMMENDED WASTE MANAGEMENT SYSTEM - FIVE YEAR CHRONOLOGY**  
**FRASER VALLEY REGIONAL DISTRICT**  
**RESIDUALS MANAGEMENT**

|-----------|------|------|------|------|------|-----------------|
| **Disposal** | -maintain existing landfill and transfer stations  
-monitor submissions of landfill closure plans  
-work with MELP to develop OCs  
-upgrade Harrison Mills transfer station  
-prioritize Chaumox landfill upgrades, costing, bear issues, etc. | -maintain existing landfills and transfer stations, respond to needs  
-study needs for collection in Electoral Area H  
-phased Chaumox landfill improvements, if necessary | -maintain existing landfills and transfer stations, respond to needs  
-phased Chaumox landfill improvements, if necessary  
-conduct a waste management license study for facilities and haulers | -maintain existing landfills and transfer stations, respond to needs  
-implant potential hauler and waste stream management licenses  
-re-evaluate disposal options | -status quo | -re-evaluate collection and disposal programs as part of formal Plan review |

OC = Operational Certificate  
DLC = Demolition/Land Clearing/Construction Waste
4.3 ADMINISTRATION AND JURISDICTION

Once approved by the Minister of Environment, Lands and Parks, Regional Solid Waste Management Plans give the Regional District the authority to implement the policies and procedures outlined in the Plan. This may include approving the operation and administration of programs and sites by municipalities and other groups within the Regional District. The Plan does not include waste disposed of on the property on which it was generated. In the Plan strategies and policies, it has been identified that some programs shall involve cooperation and involvement of other organizations, such as municipalities. Table 4-5 indicates which organizations are involved and what responsibilities they would have in implementation of the FVRD Plan. Joint responsibility and implementation between the Regional District and its member municipalities may be necessary in some cases.

The FVRD will encourage communication among all groups potentially affected by the Plan implementation, with the goal of coordinating efforts to the greatest extent possible. These groups include the following:

* senior governments;
* the member municipalities;
* First Nations communities within FVRD;
* adjacent regional districts;
* operators of existing recycling facilities and companies;
* the public; and
* other stakeholders.

The Senior government responsibility in the implementation of the Plan is primarily in the areas of reduction and reuse, product stewardship programs, public education and funding. The FVRD will rely on these senior government activities to reach its target diversion rate.

Member municipalities will be responsible for assisting the Regional District with education programs, participating on advisory committees, developing and implementing collection and drop-off programs for recyclables, compostables and waste, and operating disposal facilities. Part of the cooperation with FVRD may involve passing certain bylaws with respect to collection and mandatory recycling and composting. Municipalities should participate in any user pay pricing policies that apply to their programs. Those operating landfills should implement disposal bans, as applicable. Member municipalities are responsible
for reporting material quantities to the Regional District on an annual basis, as part of the data tracking and monitoring program. Each municipality has appointed a technical representative to sit on the Plan Monitoring Advisory Committee.

FVRD responsibility is to provide broad solid waste management planning, Plan initiatives coordination, monitoring of Plan effectiveness, and implementation of Plan strategies for Electoral Areas. In addition, the Regional District will coordinate public education and promotion programs, and play a lead role in development of an illegal dumping strategy. First Nations populations have been included as being participatory in the Plan. First Nations governments should be encouraged to cooperate with the Regional District in implementing and participating in the waste management system. Any waste or recycling collection programs within First Nations lands will be the responsibility of the respective First Nations groups.

First Nations peoples will be encouraged to comply with provincial standards and asked to cooperate in any programs developed to inhibit poor waste management handling practices. The FVRD will continue to work with First Nations peoples, the GVRD and senior levels of government to address waste disposal on First Nation lands.

FVRD will look for opportunities to cooperate with adjacent regional districts in order to reduce costs through the economy of scale. There is already some cooperation with the GVRD through the City of Abbotsford’s Matsqui Transfer Station disposal agreement. There may be room for greater cooperation in recycling and composting, with the GVRD and other adjacent regional districts.

Cooperation with regional districts may be fostered in the following manner, if economical:

* developing educational information for reduction and reuse programs;
* continued information sharing between regional districts;
* developing markets for recyclable materials through an inter-regional district marketing/brokering cooperative;
* sharing information regarding windrow composting operations; and
* sharing of landfill space, if appropriate agreements are forged.
<table>
<thead>
<tr>
<th>Role</th>
<th>Administration</th>
<th>Collection</th>
<th>Composting</th>
<th>Recycling</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Recycling/Final Disposal</td>
</tr>
<tr>
<td>Secondary</td>
<td>operate</td>
<td>operate</td>
<td>operate</td>
<td>operate</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>operate</td>
<td>develop/hero</td>
<td>participate</td>
<td>cooperate</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>operate</td>
<td>supply/hero</td>
<td>cooperate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>First Nations</td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Member Municipalities</td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fraser District</td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Provincial Government</td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal Government</td>
</tr>
</tbody>
</table>

*Note: The table details roles and responsibilities within the Fraser Valley Regional District's jurisdictional responsibilities.*
4.4 STAFFING

The implementation of this Plan will require the hiring or reassignment of staff. Staffing levels may fluctuate for the first few years while the Plan is being implemented, but should level off after the initial period. The following is an estimate of the staff that could be required for the FVRD Plan.

* One environmental services coordinator (ESC) will be required to coordinate all implementation activities of the Plan. The position would include tendering of any required contracts, coordinating the implementation committees, developing reduction and reuse programs and public education packages, tracking materials in recycling, composting and disposal programs (both public and private), spearheading any siting studies, developing the annual cost recovery formula, and supervising operations such as recycling, composting, and residuals management. It is likely only one staff will be required to carry out the duties, however, it is possible that this could be carried out by two personnel, one facilitating waste diversion issues, the other, waste disposal issues.

* Regional or municipal public works staff will be required to assist in the distribution of backyard composting bins to the public.

* One part-time school liaison may be required to assist in development and implementation of the waste management education program at schools.

* In addition, up to three enforcement staff may be needed. These staff members would be responsible for ensuring compliance with any regional district bylaws implemented, such as an anti-littering bylaw.

* At least one staff member will be required for issuance, administration and inspections related to Waste Stream Management, Hauler and Recycler Licenses, if the FVRD chooses to utilize these licenses at a future point in time.

* Member municipalities will require staff under their own jurisdiction, to operate municipal programs.
Contracting of any of the above services to private industry would reduce the FVRD staff required. This staffing list does not include additional staff required by municipal or non-profit operations, such as collection or recyclables processing facilities.

4.5 PLAN MONITORING AND REVIEW

The following procedures have been established to determine how effectively the Plan is being implemented. Most importantly, diversion rates must be monitored to ensure that Plan implementation is on schedule. All information regarding Plan effectiveness is directed to the Plan Monitoring Advisory Committee (PMAC), which was established to perform this function. Committees are discussed in detail in Section 7.

* The PMAC is responsible for ensuring that waste management strategies are being implemented in accordance with the Plan, and that target diversion rates are being met. The PMAC will recommend alternate strategies to be implemented if targets are not being reached. Additionally, the PMAC will determine if costs are being recovered effectively (user pay, taxes, grants and funding, tipping fees, etc) and from whom (Regional District, municipalities, senior government, industry, consumers, etc.). Terms of reference for the PMAC are provided in Appendix F.

Several working groups may be formed as required, such as the Implementation Working Group (IWG). If the FVRD considers embarking on a landfill siting process, a Facility Siting Advisory sub-Committee (FSAC) will be formed.

* The primary means of determining the effectiveness of the Plan will be by monitoring quantities of waste materials passing through all facilities in the Regional District. These facilities primarily include the Matsqui Transfer Station, the landfills, the AMRD, other private recycling facilities, local composting facilities, salvaging companies and scrap dealers. All facility operators will be requested to submit quantities of materials passing through the facilities on an annual basis. If data records are not to the satisfaction of the Regional District, these facilities may be required to have current Waste Stream Management Licenses (WSML’s) with the FVRD. If these licenses are in place, one requirement will be the mandatory submission of an annual report, detailing material classes and
tonnages passing through the facility (referred to in Section 3.5). If collection of material weights is cost prohibitive, the facility owner may apply to collect material volumes instead. In absence of this information, in the case of a landfill, a physical survey must be completed from which the changing volume can be tracked and weight estimated. Where a ground survey of a landfill is being used, an indication of cover quantities must be provided, as well as documentation of compacting procedures and equipment types.

Annual landfill and transfer station tonnages directly indicate the amount of waste being disposed, while quantities at recycling and composting facilities indicate the material being diverted. All quantities will be tracked and reported to the best of FVRD Staff ability.

* Quantities from the transfer station and landfills will be divided by the estimated population of the Regional District to determine the per capita rate of waste disposal. By comparing to the baseline waste generation rate and the landfill quantities from year to year, the yearly diversion rate will be calculated. Extra effort should be made to track materials originating in the ICI and DLC sectors, as these sectors operate primarily through private means.

* Quantities from facilities other than landfills, will be divided by the estimated population of the Regional District to determine the per capita diversion through each of these measures. An estimate will be made of reduction and reuse rates, and this estimate will be added to calculate total waste diversion. If the sum of the per capita disposal rate and the per capita diversion rate is significantly less than the baseline waste generation rate, it is likely unknown disposal or handling of waste is occurring through waste migration. Waste migrating out of the Regional District has demonstrated a need to consider Waste Management Licensing. Licenses could specify operating and reporting requirements for all private facilities and hauling destinations authorized within the Plan.

* All records submitted to the PMAC will be compared to the target diversion rates established in this Plan.

* The ESC and the Plan Monitoring Advisory Committee will conduct an annual review of certain components of the Plan to determine whether any changes need to be made.
These components will include at least the following:

- effectiveness of can limits;
- effectiveness of various licenses and the clauses in those licenses;
- effectiveness of landfill material bans;
- educational and promotional material; and
- tendered contracts.

* The PMAC will annually assess the effectiveness of the cost recovery model in generating revenue to cover waste management costs, and assist the coordinator in determining the appropriate cost recovery structure for the approaching year.

The Plan shall be subject to a full review every five years to ensure that the strategies in the Plan are still appropriate for the changing demographics of FVRD. The reviews will be completed by the Environmental Services Coordinator, with input from the Plan Monitoring Advisory Committee.

4.6 WASTE DIVERSION CONTINGENCY PLANS

If the target diversion rates identified in Section 1 are not being met during implementation of the Plan, a contingency plan must be implemented. This plan is outlined below.

On a yearly basis, the PMAC will review the ESC’s annual Solid Waste Tracking Report to determine whether the Plan is meeting expected diversion rates. If the rates are not being met, the PMAC will attempt to identify the reasons. Reasons for not achieving target diversion rates could include the following:

* markets for recyclable and/or compostable materials are degraded;
* public participation and enthusiasm are lower than expected;
* technology utilized is not as effective as anticipated;
* a technology is no longer available or is unable to implemented;
* Plan monitoring activities indicate that undesirable dumping and waste migration is occurring;
* Plan monitoring activities indicate that reduction and reuse rates are low;
* senior government has not fully developed reduction and/or reuse programs; or
* ICI/DLC sector is not achieving diversion rates through private means.
Using whatever means are necessary or available, the ESC and PMAC will determine in which area the deficit is occurring, and ascertain the best course of action to overcome the problem. These measures could include the following:

* informing senior government when senior government programs are not effective;
* increasing the emphasis on reduction and reuse initiatives, including primarily education and promotion programs;
* re-evaluating technologies;
* re-evaluating markets for materials, including investigating further afield;
* increasing the level of enforcement;
* increasing the service to ICI and DLC sectors, including providing collection on a fee-for-service basis;
* revising provisions of Waste Stream Management, Recycler and/or Hauler Licenses; or
* modifications to the rate structure, e.g. tipping fees, user pay mechanisms, can limits.

In addition, the Regional District may hire a consultant to develop programs to improve Plan implementation and achieve target diversion rates.
4.7 PROCESS FOR AUTHORIZING NEW FACILITIES

4.7.1 Facilities Requiring an Application

All facilities not currently authorized in the Solid Waste Management Plan that are involved, or propose to be involved, in the handling of Municipal Solid Waste or recyclable materials, be it processing or disposal, shall file an application for authorization in the Plan with the Regional District. In the Fraser Valley Regional District (FVRD) this includes the following:

a) a disposal facility;
b) a transfer station;
c) a material recovery facility;
d) a storage facility;
e) a brokering facility;
f) a composting facility;
g) a land clearing/demolition waste facility;
h) pet crematoria;
i) any proposal for the beneficial use of waste;
j) any other facility the Ministry of Environment, Lands and Parks requires

The Regional Waste Manager of the Ministry of Environment, Lands and Parks (MELP) Lower Mainland office in Surrey, B.C., shall determine if a given or proposed facility or process can be authorized to the Plan using this procedure (as per Section 4.7.3), or a SWM Plan Amendment is required.

4.7.2 Pre-Application Meeting

Prior to investing significant time and effort in the compilation of a formal application, it is required that the applicant discuss plans with BC Environment and meet with FVRD staff to identify any immediate concerns.

4.7.3 Form of Application

An application shall be filed at the Regional District office in the form prescribed by the FVRD and copied to both the host municipality, if applicable, and the Regional Waste Manager at the Ministry of Environment, Lands and Parks in Surrey, B.C. Applications submitted to the Regional District will not be accepted unless accompanied by the application fee specified in Section 4.7.4. The Regional District will prepare a letter to the Regional Waste Manager to determine if the proposed facility or process can be added to the Plan using the procedure found in Section 4.7, or a SWM Plan Amendment is required.
4.7.4 Application Fee

In keeping with the user-pay principles outlined in Section 3.1, every person who files an application shall pay to the Regional District, on application, a fee (as per FVRD Bylaw No. 0327, 1999) reflecting the technical review and administrative costs necessary to process these applications.

FVRD member municipalities (Abbotsford, Mission, Chilliwack, Hope, Kent, and Harrison Hot Springs) shall be exempt from all application fees, as they are already contributing funds to the Solid Waste Management budget through disposal fees and tax requisition.

4.7.5 Application Enclosures

The application shall contain the following enclosures:

4.7.5.1 Operating Plan

The applicant shall submit an Operations Plan including, but not limited to:

a) the legal description and civic address of the facility;

b) the name of the owner of the land on which the facility is located or proposed to be located;

c) the full name and address of the operator of the facility;

d) a brief and complete description of the activity to be carried out and the municipal solid waste or recyclable material to be handled at the facility;

e) maximum annual tonnage of material to be handled at the facility;

f) maximum discharge to Air, Water or Land, if applicable;

g) other information as requested by the Regional District.

4.7.5.2 Approval of Host Municipality

The applicant shall obtain written approval from the Municipal Administrator or designate of the municipality in which the facility is proposed to be located. This approval shall state that the facility meets all zoning bylaws and business licensing requirements and that the municipality endorses (at least in-principle), inclusion of this facility in the Plan. The Regional District shall not process an application if, in a report submitted to the Regional District, the municipality states that it does not approve of the application.

4.7.5.3 MELP Regional Waste Manager Concerns

All facilities must meet the British Columbia standards for environmental protection, and the applicable processes for the establishment of such
facilities. If higher standards exist in the host jurisdiction, those standards must be met. A letter from the Regional Waste Manager will be required, specifying initial concerns, if any, and confirming their receipt of the application.

4.7.6 Preliminary Approval by Regional District Board

Once the Regional Waste Manager has determined that the proposed facility can be added to the Plan using the procedure found in Section 4.7, and upon receipt of an application, the application fee and the application enclosures (Sections 4.7.4 and 4.7.5, respectively), the application shall be submitted to the FVRD Board of Directors for approval to continue with the application process.

4.7.7 Preliminary Evaluation of Plan Authorization Application

Having obtained the approval (at least in-principle) of both the host municipality and the Regional District Board of Directors, the application is subject to review by Regional District staff. In reviewing the application, Regional District Staff may consider the following:

a) the potential risk posed to the environment and public health;

b) protection of the environment (i.e. security considerations);

c) Ministry of Environment, Lands and Parks concerns;

d) compliance with Municipal or Regional District zoning and land use designations;

e) effects on other facilities identified in the Plan;

f) the report of the Municipal Council and other municipal concerns;

g) effects on the local community resulting from, but not limited to: transportation, odour, noise and aesthetics;

h) any environmental impact assessment and any other investigations, test, surveys or any other action taken;

i) any other information submitted to the Regional District;

j) operating plans submitted to the Regional District;

k) closure plans submitted to the Regional District;

l) the payment of any annual fees for operation or reporting of quantities as required by the Regional District;

m) compliance with the guiding principles of the Solid Waste Management Plan; and

n) any other matter which the Regional District considers relevant.

If the reports and technical studies indicate that the facility may be acceptable, (subject to addressing BC Environment concerns), the applicant will be directed by Regional District staff to proceed with public
consultation as per Section 4.7.8, to determine the level of acceptability to the community.

4.7.8 Public Consultation Procedure

The applicant shall, at their own cost, and within 30 days of receiving Regional District direction as per Section 4.7.7:

1. Publish two (2) successive notices in a newspaper that is distributed at least weekly in the area where the facility is located or proposed to be located. In the event that the area is not serviced by a newspaper, the application shall be posted in a manner acceptable to the Regional District. The notice must be FVRD approved and entitled SOLID WASTE MANAGEMENT PLAN - REQUEST FOR A NEW FACILITY AUTHORIZATION. The notice must be at least 10 cm in width, at least 100 square centimetres in area (i.e. equivalent to 4"x 4"), and include at least the following information:
   a) the legal description and civic address of the facility;
   b) the name of the owner of the land on which the facility is located or proposed to be located;
   c) the full name and address of the operator of the facility;
   d) a brief and complete description of the activity to be carried out and the municipal solid waste or recyclable material to be handled at the facility;
   e) that any concerns should be addressed in writing to the FVRD; and
   f) other information considered necessary by the Regional District.

2. Post a readable copy of the application, at the discretion of the Regional District, in a conspicuous place at all main road entrances to the land on which the facility is located, or proposed to be located, and/or erect a full-size sign in a location visible to the general public and keep these posted for a period of not less than 30 days.

3. Serve a written notice that an application has been filed, on all neighbours, commercial or residential, within 50 metres from any lot line of the subject property. The written notice shall contain the information set out in paragraph (1) a) to e) above.

In cases where there will be a significant discharge to the environment, or considerable financial impact on the Plan's current solid waste facilities, the applicant may be required, at their own cost, to additionally complete the following:
(4) Arrange for a public meeting(s) as directed by the Regional District, in the municipality in which the facility is located, or proposed to be located.

(5) Publish a notice of the specifications set out in paragraph (1) a) to e) in all major newspapers of the Fraser Valley, at the discretion of the Regional District.

(6) Publish the subject application in The British Columbia Gazette, under the heading Waste Management Application.

(7) Serve a written notice that an application has been filed, on any tenants, commercial or residential, within 1 km of the proposed facility, that the Regional District considers affected. The written notice shall contain the information set out in paragraph (1) a) to e).

(8) Forward copies of the application to the following agencies for circulation and review:

   a) Environment Canada;
   b) Ministry of Health;
   c) Ministry of Environment, Lands and Parks, Lower Mainland Region;
   d) Council of Host Municipality; and
   e) Any other government agencies the Regional District or Regional Waste Manager consider necessary.

(9) Additional Public Consultation as recommended by the MELP Regional Waste Manager.

4.7.9 Final Evaluation of Application

Upon receipt of the required documents indicating the appropriate Public Consultation Process has been completed, Regional District Staff shall complete a comprehensive Technical Review of the proposed facility. If the review indicates the proposed facility is feasible, all concerns have been addressed, and the Regional Waste Manager is satisfied that the application meets Ministry requirements for environmental protection, Staff will prepare a Final Evaluation Report to be presented to the Regional District Executive Committee.

Upon Executive Committee approval, the application will be presented to the Board of Directors for final authorization and inclusion in the Plan. Board approval of the proposed application shall take into account the following:

1) Approval of the application by Regional District staff, the Plan Monitoring Advisory Committee and the Regional District Executive Committee;
2) Presentation on proposed facility by the applicant to the FVRD;

3) Written notice from the MELP Regional Waste Manager, stating the application meets Ministry requirements for environmental protection;

4) Payment in full of the Application Fee as determined by the FVRD under Section 4.7.4;

5) The results of the Public Consultation Process and Technical Review; and

6) If the facility is to be situated within a municipality, the final approval of the Host Municipality, after receiving the completed application, as per Sections 4.7.3, 4.7.5, and 4.7.8.

4.7.10 Final Approval by Regional District Board

Upon approval of an application by the Regional District Board of Directors, the facility shall be considered authorized in the Plan. As a condition of this Final Approval, the Board, in accordance with Section 19(2) of the Waste Management Act, shall require an interim Operational Plan for the facility.

The MELP Regional Waste Manager, in accordance with Section 18(5) of the Waste Management Act, may issue an Operational Certificate (OC) for the facility. If an OC is issued by MELP, it will supersede the previous interim Operational Plan required by the Board. Prior to operational start-up of the facility, the Regional District shall receive a copy of the OC, or other Operational Plan documents as required by the Board.

4.7.11 Notification of Agencies

On approval of an application, the Regional District shall notify, in writing, the following agencies:

a) Environment Canada;
b) Ministry of Environment, Lands and Parks, Lower Mainland Region;
c) Ministry of Health;
d) any other government agencies the Regional District considers necessary;
e) Council of Host Municipality; and
f) the Applicant.
4.8 DISPUTE RESOLUTION PROCEDURE

During implementation of the Plan, disputes may arise as a result of action or initiatives required by the Plan. Disputes may arise during implementation of the Plan which must be addressed. This section establishes a dispute resolution procedure for the following disputes:

* an administrative decision made by the Regional District regarding the issuance of a waste management license,
* interpretation of a statement or provision in the Plan, or
* any other matter not related to an operational certificate or proposed wording change of the Plan.

Disputes will be settled using the following procedure:

* The parties will initially attempt to resolve the dispute without outside intervention.
* If the parties cannot resolve the dispute on their own, the Plan Monitoring Advisory Committee and/or the Executive Committee will be utilized as a mediator between the parties. Any member of the PMAC directly involved (employed or otherwise) with the parties in dispute will not be granted voting/motioning privileges, but will remain as an active participant in all discussions. All attempts will be made to reach an agreement.
* If the dispute cannot be resolved with the assistance of the PMAC, an arbitrator (consultant) may be assigned, the cost to be shared between both parties. The PMAC will write a report that details the dispute and have it approved by the dissenting parties. The report will be given to the arbitrator. The arbitrator will review the report and make any inquiries he/she feels necessary to resolve the dispute. The arbitrator's decision will then be submitted to the PMAC in writing. The dispute will be considered resolved when the arbitrator's decision is approved by the PMAC and the dissenting parties.

The goal of this procedure is to have disputes settled quickly, without the need for arbitration. The cost sharing of an arbitrator will hopefully be a deterrent to reaching this step.
4.9 PLAN FLEXIBILITY

The Plan implementation schedule will be flexible enough to reflect the variability in priorities and available funding of the FVRD and its member municipalities. The FVRD will be flexible when warranted to implement plan components either directly or through private firms and/or non-profit organizations (NPO’s). There must be time allowed for a public proposal and/or tendering process, if required. Changes in implementation scheduling could occur as a result of the following:

* financing implications,
* technological changes, and/or
* availability of equipment.
5.0 PLAN FINANCING

One of the key components of Plan implementation is financing. Because the existing and proposed programs will be implemented by various agencies and organizations (FVRD, member municipalities, non-profit organizations, and the private sector), answering the key questions “How much will it cost?” and “How will it be paid for?” is complex. The following section details the cost considerations involved, and estimates the costs for programs in the various communities of the Regional District.

5.1 COST PROJECTIONS

Estimated implementation costs were developed in Stage 2 reports (pre-amalgamation) for each of the three subregions of FVRD. A summary of the projected program cost estimates (new and existing programs) has been projected to 2000, as shown in Table 5-1. The projection of costs is somewhat uncertain for activities such as recycling and landfill operations, due to market fluctuations and potential legislative or technological changes. Furthermore, for some programs, the specific operational details in future years will largely depend on successes achieved previously, resulting in a need to “fine-tune” various programs. An annual inflation rate of 2% has been applied to all cost projections.

The Plan details numerous waste reduction strategies and initiatives, as described in Section 3. These initiatives may be placed into two broad categories, "regional" and "local". A regional program is one with cross-jurisdictional impacts, requiring a coordinated approach to implementation; a local program has a specific service area (e.g. a program implemented by a member municipality or a Regional District program implemented within a service area established in an electoral area). The success of this Plan is dependent on the implementation of both types of initiatives, and includes the comprehensive tracking of wastes involved from the various independent program operators (Regional District, member municipality, private sector, non-profit organization).

Many of the costs indicated in Table 5-1 are already included in regional and/or municipal budgets. They have been included in the funding table such that the total costs of solid waste management are captured in the Plan. Different municipalities provide different services, and therefore have alternate approaches to costing out programs.
### TABLE 5-1: SOLID WASTE MANAGEMENT COSTS: 1996 - 2000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REGIONAL REDUCE &amp; REUSE PROGRAMS</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion and Education</td>
<td>n/a</td>
<td>45,775</td>
<td>46,690</td>
<td>47,605</td>
<td>47,620</td>
</tr>
<tr>
<td>Reduction and Reuse</td>
<td>n/a</td>
<td>15,800</td>
<td>16,116</td>
<td>16,432</td>
<td>16,748</td>
</tr>
<tr>
<td>Recycling</td>
<td>n/a</td>
<td>10,310</td>
<td>10,516</td>
<td>10,722</td>
<td>10,928</td>
</tr>
<tr>
<td>Composting &lt;sup&gt;3&lt;/sup&gt; (the distribution and sale of composters is self financing)</td>
<td>n/a</td>
<td>37,500</td>
<td>38,250</td>
<td>39,000</td>
<td>39,750</td>
</tr>
<tr>
<td>Bylaws</td>
<td>n/a</td>
<td>3,200</td>
<td>12,800</td>
<td>13,056</td>
<td>13,312</td>
</tr>
<tr>
<td>Solid Waste System Management</td>
<td>n/a</td>
<td>66,409</td>
<td>67,737</td>
<td>69,065</td>
<td>70,393</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>231,550</td>
<td>180,991</td>
<td>194,107</td>
<td>197,879</td>
</tr>
</tbody>
</table>

**LOCAL (MUNICIPAL) REDUCE & REUSE PROGRAMS**

| MISSION - Establish Waste Exchange Area, Minnie's Pit | n/a | n/a | 10,000 | n/a | n/a |
| Tree Retention Policy (Mission) | n/a | 3,000 | n/a | n/a | n/a |
| Minnie's Pit Landfill Bans | n/a | 3,000 | n/a | n/a | n/a |
| 3 R's Admin/public education/advertising | 34,864 | 37,708 | 38,462 | 39,231 | 40,016 |

**LOCAL (ELECTORAL AREA) PROGRAMS: COLLECTION AND RECYCLING**

<p>| Electoral Area A Garbage and Recycling Collection | 24,827 | 24,575 | 26,851 | 43,161 | 44,024 |
| Electoral Area B program included with Hope |      |      |      |      |      |
| Electoral Area C Garbage and Recycling Depot Collection &lt;sup&gt;4&lt;/sup&gt; | 27,199 | 84,604 | 44,731 | 58,238 | 59,402 |
| Electoral Area D Recycling Depot Collection | 45,000 | 45,925 |      |      |      |</p>
<table>
<thead>
<tr>
<th>Electoral Areas F &amp; G Garbage &amp; Recycling Depot Collection (Sylvester Rd. &amp; Athey Rd Transfer Stations)</th>
<th>15,760</th>
<th>39,557</th>
<th>42,751</th>
<th>43,230</th>
<th>44,094</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LOCAL (MUNICIPAL) PROGRAMS: COLLECTION &amp; RECYCLING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABBOTSFORD Integrated Garbage and Recycling includes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- West Abbotsford Rural collection</td>
<td>1,571,600</td>
<td>1,653,064</td>
<td>1,686,125</td>
<td>1,719,848</td>
<td>1,754,245</td>
</tr>
<tr>
<td>- West Abbotsford Urban collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- East Abbotsford collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Recycling Tipping fee @ AMRD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Spring and Fall Cleanup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Promotion and Advertising</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MISSION Integrated Garbage &amp; Recycling includes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Single &amp; Multi-Family collection</td>
<td>890,707</td>
<td>908,521</td>
<td>918,637</td>
<td>733,714</td>
<td>748,388</td>
</tr>
<tr>
<td>- Rural recycling bins</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Recycling Tipping fee @ AMRD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- ICI Recycling Programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KENT Recycling Depot Collection</td>
<td>15,800</td>
<td>38,000</td>
<td>38,750</td>
<td>39,535</td>
<td>40,326</td>
</tr>
<tr>
<td>HARRISON HOT SPRINGS Garbage and Recycling</td>
<td>44,000</td>
<td>45,530</td>
<td>46,440</td>
<td>47,369</td>
<td>48,317</td>
</tr>
<tr>
<td>HOPE and Electoral Area B Garbage and Recycling includes:</td>
<td>749,312</td>
<td>779,804</td>
<td>784,719</td>
<td>791,000</td>
<td>825,000</td>
</tr>
<tr>
<td>- Single &amp; Multi-Family collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Rural recycling and garbage bin service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Commercial collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Recycling Depot subsidy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CULTUS LAKE Garbage Collection</td>
<td>42,560</td>
<td>43,420</td>
<td>44,288</td>
<td>45,174</td>
<td>46,078</td>
</tr>
<tr>
<td>CHILLIWACK &quot;Green Bin&quot; Recycling Program</td>
<td>113,000</td>
<td>204,000</td>
<td>178,000</td>
<td>186,000</td>
<td>160,000</td>
</tr>
<tr>
<td>Additional Programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LOCAL (MUNICIPAL) PROGRAMS: COMPOSTING**

| ABBOTSFORD - site operations | 91,237 | 153,754 | 164,754 | 175,000 | 186,000 |
| MISSION - collection service, bins, tipping fee, operations | 231,888 | 236,526 | 252,911 | 224,759 | 229,254 |
| CHILLIWACK and Area - (Pit 43) private site; user fees apply | * | * | * | * | * |
| HOPE - landfill composting operations | 37,000 | 38,480 | 39,250 | 40,035 | 40,835 |
| NORTH SHORE (Kent/HHS) composting (collection & operations) | 17,750 | 18,000 | 18,360 | 18,727 | 19,102 |
## PLAN ELEMENTS

### LOCAL PROGRAMS: DISPOSAL & RESIDUAL MANAGEMENT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaumox Road Landfill (Electoral Area A)</td>
<td>36,405</td>
<td>27,955</td>
<td>33,324</td>
<td>48,436</td>
<td>49,405</td>
</tr>
<tr>
<td>HOPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Landfill</td>
<td>168,403</td>
<td>236,271</td>
<td>455,482</td>
<td>500,000</td>
<td>300,000</td>
</tr>
<tr>
<td>MISSION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Minnie's Pit Landfill Operations</td>
<td>321,281</td>
<td>327,707</td>
<td>390,839</td>
<td>349,406</td>
<td>356,394</td>
</tr>
<tr>
<td>- Transfer to Reserves (40%)</td>
<td>295,392</td>
<td>301,300</td>
<td>273,002</td>
<td>507,432</td>
<td>517,580</td>
</tr>
<tr>
<td>- Residuals Admin/ public education/ advertising</td>
<td>48,049</td>
<td>49,010</td>
<td>42,900</td>
<td>36,900</td>
<td>37,638</td>
</tr>
<tr>
<td>ABBOTSFORD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Matsqui Transfer Station tipping fee</td>
<td>802,840</td>
<td>825,190</td>
<td>854,080</td>
<td>875,000</td>
<td>900,000</td>
</tr>
<tr>
<td>- Valley Road Landfill maintenance</td>
<td>145,800</td>
<td>151,632</td>
<td>154,665</td>
<td>157,758</td>
<td>160,913</td>
</tr>
<tr>
<td>CHILLIWACK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Bailey Landfill</td>
<td>520,000</td>
<td>544,000</td>
<td>529,000</td>
<td>526,000</td>
<td>566,000</td>
</tr>
<tr>
<td>Cultus Lake Landfill</td>
<td>42,500</td>
<td>43,420</td>
<td>44,288</td>
<td>45,174</td>
<td>46,078</td>
</tr>
</tbody>
</table>

1. Annual inflation rate of 2% assumed.
3. Assume composters purchased through FVRD and distributed through partnership with private sector in various communities. Some revenue anticipated from composter sales.
4. 1997 costs include capital costs for Phase 2 (Harrison Mills site).
5. Includes "Spring Clean-Up", HHW programs, misc. Litter clean-up costs.
6. Administrative and related costs, composting operations are privately operated.
* Future costs not known or able to be projected at this time due to uncertainties in markets, technology, or willingness to fund/support.
+ Included in administration/ public education/ enforcement costs

**Please Note:** Estimates do not account for population growth.
The costs summarized in Table 5-1 include costs to the Regional District and to participating member municipalities. In some cases, the costs to private individuals may not be captured, for example, for the individually contracted collection services in Chilliwack, Kent, and Electoral Areas D and E. The total cost of new regional 3 Rs programs only, as recommended in this Plan, is $180,991 for 1997. Assuming all proposed regional programs are implemented, this would result in a cost of less than $0.014 per $1000 assessment for the programs, throughout the Regional District.

Since it is difficult to predict to what level the public will participate in proposed waste management programs, these costs are estimates based on assumed participation rates. Actual costs could depart significantly from the costs presented here, depending on the response of local residents and businesses.

5.2 COST RECOVERY MECHANISMS

The FVRD will be responsible for program administration and cost recovery for all common regional programs, as well as local programs for unincorporated electoral areas. Member municipalities will be responsible for cost recovery of their own diversion, collection and disposal programs.

There are several means of recovering the full costs of integrated waste management. The primary mechanisms include:

* taxes through property assessment,
* a utility fee (per household rate based on municipally supplied/contracted service),
* a service fee (for individuals who directly contract a service such as collection),
* user pay programs such as bag tags for extra waste bags over a set limit,
* disposal tipping fees, and
* other fees and fines (including potential licensing fees).

These sources of funding can be defined as follows:

**Taxes**

Funds can be raised through taxes that are assessed on all homeowners, apartment block owners and businesses within the Regional District. Solid waste planning and general regional programs and services are often supported through tax requisitions. Through this mechanism, payment is loosely related to the ability to pay, since taxes are assessed
through property value. The advantage of using tax requisitions is the stability of program funding. The disadvantages of using tax requisitions are the practical limit on general taxation and the potential of inadvertently subsidizing inappropriate activities. For example, the tax funding of disposal sites effectively causes waste reducers to financially subsidize non-waste reducers who have the same assessment value.

**Utility Fee**

Unlike taxes, which are usually assessed on the basis of property value regardless of the service provided, a utility fee is a cost item which is displayed on a tax notice, but is equal for each household or dwelling unit equivalent e.g. an apartment unit, in a service area. For some, this is seen as a more equitable means of paying for a service; i.e., equal charges for equal service. All businesses would be assessed a dwelling unit equivalent, which would be the basis of determining the utility fees charged to that business. The dwelling unit equivalent could be assessed based on company revenues, company size (number of employees), or estimated quantity of solid waste disposed.

**Service Fee**

Although not used to recover any of the costs outlined above, a service fee would be the fee charged to an individual homeowner or business by a private contractor for a direct service, such as collection. Chilliwack, Kent, and Electoral Areas D and E are areas where individual residents contract direct to haulers, and would be charged a service fee by the private contractor. It is assumed that, for specific services, such as collection, service fees would be very similar to utility fees. However, the costs of these services are not reflected in Table 5-1.

**User Pay Programs**

User fees are direct assessments to users for services received. User fees must be part of the cost recovery mechanism in order to satisfy the MELP Plan requirements. These fees provide financial incentives to reduce waste generation. Garbage and/or recycling collection fees based on the number of cans or bags at the curb, and yard waste composting tipping fees are examples of direct user fees. Only those directly receiving the services are charged the fee, and the amount of the charge is based on the level of service and/or the amount of material that is
collected or processed. Disposal tipping fees are also an example of user fees although, as described below, disposal tipping fees may also be used to fund a number of programs not directly related to disposal site operation.

**Disposal Tipping Fees**

Funds raised through disposal tipping fees can be used to cover the cost of disposal operations, landfill siting and replacement, landfill closure reserves, general solid waste management and/or 3R's programs. The advantage of funding programs through this mechanism is that higher tipping fees encourage additional 3R's practices and penalize large waste generators. The disadvantage of this funding mechanism is the potential for a declining funding base as the success of 3R's programs decreases disposal volumes. The need for revenue to financially support 3R's programs could increase at the same time disposal quantities (and therefore tipping fee revenue) are declining. This funding instability can result in the need to eventually increase tipping fees. At that point, a reassessment of the funding formula may be required. Tipping fees should be monitored over time, as very high tipping fees can lead to illegal dumping.

**Other Fees and Fines**

Other fees and fines can be used to fund portions of the waste management system. These have been described in some detail in Section 3.1.

The Fraser Valley Regional District passed a resolution on May 27th, 1997, to invoice waste disposal facility operators of landfills and major transfer station facilities a surcharge fee per tonne for all municipal solid waste accepted for disposal (this does not include recyclables or compostables). Any private facility that ships waste outside of the Regional District will be charged the same levy currently being charged to existing waste disposal facilities.

Upon implementation, waste management license fees, as discussed in Section 3.5, would be used to cover administrative costs of the licensing system.
Grants and other funding from senior government have already been taken into account in the cost estimates in Table 5-1. The means of recovering costs for each of the system components is described in the following sections. The following describes the relative contributions of each funding mechanism to each of the programs:

i) **Reduction & Reuse**

Reduction and Reuse initiatives, including backyard composting, are programs which have a benefit to all those in the Regional District, through decreased disposal costs and enhanced environmental quality. However, those who dispose large quantities of waste typically require more effort to reduce and reuse. For this reason, the amount paid toward reduction and reuse programs should relate somewhat to the amount disposed. Reduction and reuse costs should be completely funded by either utility fees or assessment-based taxes to ensure that all residents and businesses pay for the programs. In addition, it is proposed that a certain portion of the revenue generated by user pay bag tags be directed towards enhancement and augmentation of regional reduction and reuse programs. This is based on the premise that, if extra waste is being disposed, more emphasis on reduction and reuse is required. Those who are disposing of the extra waste would, therefore, pay for enhancement of reduction and reuse initiatives above the level proposed in this Plan.

ii) **Recycling**

Like reduction and reuse, recycling (not including collection) benefits the FVRD by reducing the amount of waste going to landfill. All residents with equal access to recycling should pay for the opportunity to recycle, whether or not they use that opportunity. A user pay system for recyclables would penalize those which contribute to regional benefit.

For this reason, recycling costs are covered by a utility fee, which is set for each area receiving a particular level of recycling service. For example, the City of Abbotsford and the District of Mission receive curbside recycling, where materials are taken to the AMRD facility for processing. This processing costs Abbotsford and Mission approximately $58 per tonne of material. This cost could be covered by a utility fee which is equal to all households and small businesses having access to this system. Other areas of the Regional District receive drop-off recycling, such as the District of Kent, the City of Chilliwack and Electoral Areas C, F
and G. These areas are charged a utility fee for the opportunity to recycle through drop-off depots. The utility fee is charged by the municipality where it is a municipal system, and by the Regional District in Electoral Areas. The fees collected will be used to fund the respective drop-off programs.

iii) **Composting**

Although composting benefits FVRD waste reduction efforts, not all residents or businesses would use a composting system even if there was full access to one. For example, residents in high rises do not create the same quantity of yard waste (if any) as those in single family homes. Conversely, most people create roughly the same quantity of recyclable material.

To allow for this, but not overly penalize those that participate in composting, a hybrid system is proposed for the funding of drop-off composting. The cost of the drop-off composting systems would partially be covered by a utility fee to all those who have access to the system, and partially by a tipping fee. The tipping fee should be set lower than landfill tipping fees to provide incentive to compost.

For those who receive collection of compostables, as is the case in Mission, a strict utility fee would be charged to all who have access to the program, to recover collection and processing costs.

iv) **Collection and Disposal**

Most collection programs are municipal programs. The best way to cover collection and disposal costs is through a utility fee for a basic service. This is consistent with the ministry's requirement of a user pay system which encourages waste reduction. It is suggested that the bag tags continue to be administered by the individual municipalities that have curbside collection programs and "user-pay" systems.

The cost of extra tags can be determined by calculating the marginal costs of an extra bag of garbage to collect, such as:

* picking up the can (time and wages, extra truck costs),
* disposal of the extra waste (extra tipping fees),
* the cost of printing the tag, and
administrative costs for ordering and distributing the tags.

Since it is almost impossible to predict how much of the total collected waste stream would be included in the basic service and how many extra bags will be purchased, it could be difficult to ensure full coverage of collection and disposal costs using user fees alone.

In consideration of this, it is proposed to ultimately develop a uniform can limit system for the entire FVRD, wherein a utility fee would be established to cover the full costs of collection and disposal of the projected quantity of waste collected. The additional revenue from bag tags (user fees) would then be distributed to other system components, in the following priority:

1) to cover costs of the tags, administration, and marginal costs of collecting and disposing the contents of the can,

2) to contribute to the costs of reduction and reuse initiatives,

3) to contribute to the costs of recycling, and

4) to contribute to the costs of composting.

Waste which is disposed by those not receiving a formal curbside collection program will be charged a tipping fee at the landfill or transfer station gate, i.e. the ultimate user pay system. The Regional District, in agreement with respective municipalities, would move towards standardizing landfill and transfer station tipping fees, and can limits, across the region. This type of standardization of programs and policies among municipalities and electoral areas may evolve over time, in response to Plan implementation and on-going data tracking and monitoring.

An estimate of per dwelling costs is not provided in this Plan because the variety of programs involved suggest that the figure will be different for each municipality and electoral area. It is suggested that, in response to enquiries about services, residents be directed to the appropriate member municipality, or regional district office for electoral area services, for detailed information regarding program costs during Plan implementation.
6.0 OPERATING STRATEGIES AND REQUIREMENTS

Clear-cut operating strategies and specifications are required to implement and operate the solid waste management system as defined above. The following section includes procedures and operating requirements for landfill siting, Operational Certificates, Licenses, mitigation requirements and risk assessment criteria for setting security bonds.

6.1 LANDFILL SITING CRITERIA AND METHODOLOGY

The following procedure will be followed if the Regional District is required to select a site for a new regional landfill. The landfill siting exercise shall be completed by the FVRD and/or a qualified consulting team.

* The landfill siting exercise shall be completed by the FVRD and/or a qualified consulting team.

* The Facility Siting Advisory sub-Committee (FSAC) shall be formed before the commencement of this exercise, and shall be fully involved in all steps. The makeup and role of the FSAC is discussed in Section 7.0.

* Previous studies, such as the GVRD Lower Mainland Refuse Project landfill report and other studies undertaken by member municipalities or regional districts, will be reviewed and updated with any new data which may be available at the time. New data may include waste quantities, population, land use or physical geographical information. This information will be used to identify candidate areas for landfill.

* If necessary, consideration will be given to opportunities allowing land acquisition for a landfill site.

* The candidate areas identified for landfill will be subject to a detailed screening assessment based on the following criteria, which reflect the current B.C. Landfill Criteria for Municipal Solid Waste and other technical landfill development considerations:
  * distance from residents;
  * distance from parks, schools, playgrounds, other public recreational property;
  * distance from surface water;
  * depth to groundwater;
ground and surface water flowpaths;
* proximity to areas of previous groundwater contamination;
* proximity to high rate water wells;
* accessibility to treatment facility for leachate;
* elevation (related to snow impacts, where applicable);
* depth of overburden, where available;
* potential for off-site users of energy from methane;
* distance from airports;
* unstable areas;
* accessibility (distance from paved public road);
* municipal zoning, industrial or rural, non-agricultural being desirable;
* economics - cost to design, build, operate and transport; and
* haulage impacts.

* These criteria shall be reviewed at the time of the study to determine whether other criteria are appropriate for addition. The criteria may be set into an evaluation matrix, with weights and scoring established by the FSAC.

* Rating of the candidate areas will result in a list of potential landfills, which will be further evaluated and subjected to geotechnical testing. After land purchasing options are secured, the results of the study will be taken to public meetings for input and discussion.

* After considering the geotechnical testing, the public input, member municipality and BC Environment input, and final cost estimates, the FSAC will short list the acceptable landfill sites and recommend the preferred choice to the Executive Committee of the Board. The Executive Committee will further review the various aspects of the shortlisted sites and forward a resolution recommending a site to the Board. The Board will gain formal approval of the location from BC Environment and begin land acquisition proceedings and the amendment of the Solid Waste Management Plan. The formal Plan amendment will be forwarded to BC Environment for final endorsement and the Board then formally resolves to amend the Plan.
6.2 OPERATING REQUIREMENTS FOR FACILITIES

Operational Certificates will be required for any landfills, and may be required for transfer stations, that are part of the Plan. These will ultimately replace the BC Environment permit system. Operational Certificates (OC) will be issued and administered by the Ministry of Environment Lands and Parks for landfills within FVRD.

The OC's will contain clauses and conditions which ensure that the landfill siting, design, operation and closure are in conformance with the Waste Management Act, the current BC Landfill Criteria for Municipal Solid Waste and this Solid Waste Management Plan. In order that the true cost of landfilling is accounted for when weighing waste management options, closure and post-closure plans must be submitted to MELP for all existing FVRD landfills.

There are seven active municipal solid waste landfills within FVRD for which permits are held by the Ministry of the Environment. These landfills, as identified earlier, are Minnie’s Pit, Bailey Road, Cultus Lake, Hope, Chaumox, Boulder Bay and Stave Lake. In addition, a permit has been issued for the Valley Road Landfill Standby Cell. The Ministry has indicated they will work toward development of Operational Certificates for these landfills, in consultation with landfill owners/permit holders.

A draft OC for a municipal waste landfill is found in Appendix A.

6.3 LICENSES FOR WASTE MANAGEMENT OPERATORS

As a result of Bill 17, Section 19 of the Waste Management Act empowers the FVRD to adopt a bylaw that requires haulers and owners of facilities managing municipal solid waste or recyclable material to hold a license from the Regional District. The FVRD will prepare a bylaw, subject to the experience of the GVRD, and with Board and member municipality approval. Prior to the implementation of Waste Stream Management Licensing, the FVRD will hold extensive public and stakeholder consultation to determine the level of acceptability to site owners, waste haulers and other parties involved. Potential licenses include:

* Waste Stream Management Licenses (WSML) for facilities handling municipal solid waste or a portion thereof (primarily landfills and transfer stations);
* Recycler Licenses for operators of recycling services in the Regional District; and
* Hauler Licenses for hauling operators which conduct business within the boundaries of the Regional District.

The Licenses are a means by which the FVRD may ensure that facilities and services are being operated in conformance with the requirements of the Plan. Through a license requirement to submit annual reports on material flow to the Regional District, the FVRD would be better able to track waste material quantities, increasing the accuracy of Plan Monitoring activities. Facilities that could require licenses include:

* new and existing landfills;
* the Matsqui Transfer Station;
* the AMRD and R&R recycling facilities,
* other recycling centres, including those for single materials such as old corrugated cardboard or gypsum;
* centralized composting facilities; and
* hauling services for waste or recyclable materials.

If implemented, licensing fees would reflect administrative costs only. Draft samples of these Licenses are found in Appendix E.

6.4 MITIGATIVE MEASURES

There are a number of potential environmental impacts associated with the operation of a waste management facility. Recycling facilities, composting facilities, transfer stations and landfills, all have potential effects on public health and safety, the natural environment, and social and cultural environments. Tables 6-1 through 6-4 show possible impacts and how those impacts can be lessened, or alleviated altogether, through siting, design and operation considerations.

Impacts from recycling facilities and transfer stations are primarily a result of the physical building and operations, and can easily be mitigated through operational and siting considerations. Impacts from composting facilities tend to be more extreme due to the nature of the materials. Odour, rodents, and potential for groundwater contamination are common concerns. Proper facility design and efficient operation are mitigative measures crucial to alleviating these potential problems.
Historically, landfills have had the most publicized environmental impacts of all waste management facilities. Negative environmental and social impacts are common, and tend to be more costly to mitigate than for other types of facilities. Siting, design and operating considerations are very important. It is for this reason that the comprehensive siting procedure outlined in Section 6.1 has been developed.
### TABLE 6.1  
**POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES: RECYCLING FACILITIES, FRASER VALLEY REGIONAL DISTRICT**

<table>
<thead>
<tr>
<th>EFFECTS</th>
<th>LOCATION</th>
<th>DESIGN</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PUBLIC HEALTH AND SAFETY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surface water contamination</td>
<td>locate remote from surface water</td>
<td>provide means of storm water collection and</td>
<td>avoid prolonged storage of materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>treatment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>store materials in containers or building</td>
<td></td>
</tr>
<tr>
<td>noise and litter</td>
<td>locate away from residential development</td>
<td>locate equipment indoors</td>
<td>noise suppression, prescribed operating hours,</td>
</tr>
<tr>
<td></td>
<td>(but close enough to reduce transportation</td>
<td></td>
<td>litter collection and housekeeping</td>
</tr>
<tr>
<td></td>
<td>distances)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects of increased truck traffic</td>
<td>locate on major roads</td>
<td>upgrade roads along haulage routes</td>
<td>prescribed operating hours</td>
</tr>
<tr>
<td></td>
<td>avoid residential areas, schools and bus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>routes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NATURAL ENVIRONMENT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on flora and fauna</td>
<td>locate remote from</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>valuable wildlife habitat</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SOCIAL AND CULTURAL ENVIRONMENT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on residents of existing or planned</td>
<td>avoid existing or planned</td>
<td>provide buffer from resides</td>
<td>low impact site operations</td>
</tr>
<tr>
<td>developments</td>
<td>residential areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>avoid recreational areas, schools, churches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFFECTS</td>
<td>LOCATION</td>
<td>DESIGN</td>
<td>OPERATION</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>--------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>PUBLIC HEALTH AND SAFETY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surface and groundwater contamination</td>
<td>locate remote from surface water</td>
<td>provide means of storm water collection and treatment</td>
<td>develop monitoring plan control development around site</td>
</tr>
<tr>
<td></td>
<td>locate in low permeability soils</td>
<td>divert surface water around site</td>
<td></td>
</tr>
<tr>
<td></td>
<td>avoid recharge areas, shallow aquifers, high groundwater uptake</td>
<td>provide low permeability surface (eg. pavement)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>avoid floodplains</td>
<td>provide buffer around site</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>provide roof in high precipitation areas</td>
<td></td>
</tr>
<tr>
<td>air emissions, noise, odour, dust</td>
<td>locate away from residential development (but close enough to reduce transportation distances)</td>
<td>provide paved roads provide buffer zone around site restrict type of materials to reduce odours</td>
<td>dust control noise suppression on equipment prescribed operating hours cover collection vehicles</td>
</tr>
<tr>
<td>effects of rodents</td>
<td></td>
<td></td>
<td>avoid food waste in windows</td>
</tr>
<tr>
<td>effects of increased truck traffic</td>
<td>locate on major roads avoid residential areas, schools and bus routes</td>
<td>upgrade roads along haulage routes</td>
<td>prescribed operating hours</td>
</tr>
<tr>
<td><strong>NATURAL ENVIRONMENT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on flora and fauna</td>
<td>locate remote from valuable wildlife habitat</td>
<td>proper leachate control</td>
<td></td>
</tr>
<tr>
<td>EFFECTS</td>
<td>LOCATION</td>
<td>DESIGN</td>
<td>OPERATION</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PUBLIC HEALTH AND SAFETY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surface and groundwater contamination</td>
<td>locate remote from surface water</td>
<td>provide means of storm water collection and treatment</td>
<td>avoid littering, ensure stormwater controls are in good working order</td>
</tr>
<tr>
<td></td>
<td>locate in low permeability soil</td>
<td>provide low permeability surface in active area (e.g. pavement)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>avoid recharge areas, shallow aquifers, high groundwater uptake</td>
<td>provide roof over bins</td>
<td></td>
</tr>
<tr>
<td></td>
<td>avoid floodplains</td>
<td></td>
<td></td>
</tr>
<tr>
<td>noise, odour, litter and dust</td>
<td>locate away from residential development (but close enough to reduce transportation distances)</td>
<td>store waste in sealable containers or in building</td>
<td>noise suppression, prescribed operating hours, avoid prolonged storage of waste, litter collection and housekeeping, utilize waste collection vehicles with covers</td>
</tr>
<tr>
<td>effects of animals</td>
<td></td>
<td>store waste in containers or building; bear fences</td>
<td>avoid prolonged storage, pest control</td>
</tr>
<tr>
<td>effects of increased truck traffic</td>
<td></td>
<td>upgrade roads along haulage routes</td>
<td>prescribed operating hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NATURAL ENVIRONMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on flora and fauna</td>
<td>locate remote from valuable wildlife habitat</td>
<td>proper pollution control</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCIAL AND CULTURAL ENVIRONMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on residents of existing or planned developments</td>
<td>select areas of low population density, avoid existing or planned residential areas, avoid recreational areas, schools, churches</td>
<td>provide buffer, public participation in site selection</td>
<td>good operating and housekeeping</td>
</tr>
</tbody>
</table>
### TABLE 6-4
POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:
LANDFILLS
FRASER VALLEY REGIONAL DISTRICT

<table>
<thead>
<tr>
<th>EFFECTS</th>
<th>LOCATION</th>
<th>DESIGN</th>
<th>OPERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PUBLIC HEALTH AND SAFETY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surface and groundwater contamination</td>
<td>locate remote from surface water locate in low permeability soils avoid groundwater recharge areas avoid shallow aquifers avoid major floodplains</td>
<td>provide means of storm water collection and treatment divert surface water around site provide impermeable liner provide leachate collection and treatment provide sediment control ponds provide a buffer zone around waste provide final cover to minimize infiltration</td>
<td>develop monitoring and contingency plans provide daily cover of waste provide adequate compaction of waste provide litter control control development around site</td>
</tr>
<tr>
<td>air emissions, gas migration, noise, odour, litter and dust</td>
<td>locate away from residential development locate in low permeability soils (reduces inground migration from site)</td>
<td>provide liner system provide environmental controls (gas collection and venting, leachate collection and treatment) provide adequate buffer zone paved roads litter control</td>
<td>noise suppression, prescribed operating hours, litter collection and housekeeping dust control daily cover of waste</td>
</tr>
<tr>
<td>effects of increased truck traffic</td>
<td>locate on major roads avoid residential areas, schools and bus routes</td>
<td>upgrade roads along haulage routes</td>
<td>prescribed operating hours</td>
</tr>
<tr>
<td><strong>NATURAL ENVIRONMENT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on flora and fauna</td>
<td>locate remote from valuable wildlife habitat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on aquatic ecology</td>
<td>avoid rerouting of streams provide buffer from watercourses avoid major floodplains</td>
<td>minimize diversion provide sedimentation control</td>
<td>close and vegetate as filling occurs monitor water quality</td>
</tr>
<tr>
<td>effects of vectors and nuisances (birds, rodents, insects, bears)</td>
<td>avoid licensed airfields avoid specific wildlife habitat</td>
<td>waste shredding prior to burial</td>
<td>minimize working face daily waste cover post control bear fences if required</td>
</tr>
<tr>
<td>loss of mineral, forest and agricultural reserves</td>
<td>avoid areas of mineral resources avoid forest management areas avoid agricultural land reserves</td>
<td>provide reforestation in buffer zone minimize changes in ground water flow</td>
<td>extract mineral resources as site is developed salvage timber as site is developed reforest on closure</td>
</tr>
<tr>
<td><strong>SOCIAL ENVIRONMENT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>effects on residents of existing or planned developments</td>
<td>avoid existing or planned residential areas avoid recreational areas, schools, churches</td>
<td>provide buffer from residences</td>
<td>low impact site operations</td>
</tr>
</tbody>
</table>
6.5 BEAR MANAGEMENT STRATEGY

In an effort to reduce the number of human-bear conflicts associated with exposed solid waste, the FVRD has developed the following bear management strategy. The objective of this strategy is to minimize the need for bear destruction and relocation, through effective waste management practices and public education.

PROBLEM/BACKGROUND

Improperly handled garbage has historically been the greatest source of human/bear conflicts. Traditional use of curbside garbage collection in our communities, located in prime bear habitat, has often led to bears gaining easy access to foods not found in their natural environment. Commercial dumpsters used by restaurants and grocery stores also contribute as attractants to the native bear population - particularly in rural areas.

Once garbage has been collected from homes and businesses it is taken to either a transfer station or landfill site. These facilities, if not properly bear-proofed, can easily be penetrated by bears to become another prime source of food. The typical solution to chronic bear problems at a waste disposal facility is to either permanently close the site, electrify the site’s fence, and/or cover or containerize the garbage.

Another potentially problematic aspect of residential solid waste management is the use of backyard composters, particularly if proper composting principles are not followed.

SOLUTION/STRATEGY

The FVRD believes the most important approach to conflict prevention is responsible waste management practices and public education. The FVRD will embark upon an effective education strategy for preventing bear access to residential and municipal garbage including:

- storing household garbage in bear-proof structures such as garages or basements prior to collection day;
- establishing consistent collection schedules so garbage can be placed at the curb just prior to collection;
• encouraging local governments to enact municipal bylaws prohibiting people from putting garbage out the night before collection, and specifying that garbage must be stored in durable containers, not plastic bags;
• encouraging the use of bear-proof bins for commercial food wastes; and
• encouraging the use of bear-proof bins at schools, resorts, picnic areas.

Information concerning bears and disposal sites will be produced and distributed where necessary. Existing materials prepared by the Ministry of Environment provide excellent information, and these will be incorporated into the program as appropriate.

Effective landfill site operations are essential in reducing human/bear confrontations due to the habituation of bears to garbage consumption. The FVRD and member municipalities will, in consultation with the MELP Conservation Officer Service where applicable, carry out the following operational steps at existing facilities:

• ensure an adequate daily cover of soil or approved membrane is applied to the working face (newly exposed garbage);
• minimize the size of the working face;
• upgrade perimeter fences in order to impede bear access, electrifying perimeter fences in such locations as Chaumox, Cultus Lake, Minnies Pit, and Hope landfill sites;
• develop a schedule, acceptable to MELP, for the installation of this electric fencing and/or other measures to prevent access to landfills by bears;
• consider the timing in bear proofing a facility in order to reduce the impact on the associated bears (e.g., fencing a facility in the fall can cause a bear to starve during hibernation and/or become very aggressive);
• undertake a public education program prior to bear mitigation measures being implemented, indicating reasons for this control, and the need to take personal responsibility for not providing bears with human foods.

When a source of food is removed from habituated bears, they often react by moving to communities where food is more accessible. By eliminating one problem a new short-term human/bear conflict is often created. For this reason, when a facility is closed to bears there should be emergency procedures implemented. The applicable Conservation Officer Service, R.C.M.P., and Wildlife Departments will be notified and contacts provided to landfill operators, FVRD Staff, Municipal Waste Managers and any other personnel involved.
7.0 COMMITTEES

In order for this Plan to be implemented efficiently, at least one committee must be established. As identified earlier in the Plan, this committee will be a Plan Monitoring Advisory Committee (PMAC). Informal working groups, which can formed under the PMAC, include a Plan Implementation Working Group (PIWG), a Plan Promotion and Education Working Group (PPEWG), a Facility Siting Working Group (FSWG), and a Plan Bylaw Enforcement Working Group (PBEWG). The primary focus of the PMAC is to monitor progress towards the reduction goal through waste auditing, and reviewing recommendations made by the various working groups. The working groups are made up of personnel that are focused in their area of expertise. For example, the PPEWG could be made up of a group of individuals strong in the area of education, public speaking, and media relations as opposed to the PBEWG which would be made up primarily of enforcement officers. The reporting hierarchy of these committees/groups is shown in Figure 7-1.

The primary purpose of this system is to facilitate co-operation amongst the various stakeholders including the municipalities and the Regional District. The committee and working groups act only in a review capacity for any issues related to the Plan. Municipalities could also utilise this system to provide input into some of their own local programs. As this system would pull together a wide range of solid waste expertise from across the Regional District, there is an opportunity for all to gain by: reducing effort duplication; sharing materials, expertise and experience; producing higher quality programs; feeling support in an area facing cutbacks; and reducing system costs.

The following is a description of each of the committees. Their respective terms of reference are found in Appendix F.

7.1 PLAN MONITORING ADVISORY COMMITTEE (PMAC)

The PMAC is very involved in monitoring the implementation of this Plan and the related waste diversion results across the entire Regional District. The general role of the PMAC is: to act in an advisory role to the FVRD to ensure the successful implementation of the Plan. This entails the review of all information related to implementation of the Plan, including budgets, waste quantities, populations, and diversion rates for each Plan component. The PMAC also provides a link between the various subcommittees. The membership of the PMAC includes the chair of each subcommittee.
Figure 7.1 - Committee Structure and Reporting Hierarchy

FVRD Board

Executive Committee of the Board

Plan Monitoring Advisory Committee

- Implementation Working Group
  As-Needed
- Promotion and Education Working Group
  As-Needed
- Facility Siting Working Group
  As-Needed
- Bylaw Enforcement Working Group
  As-Needed
More specifically, the PMAC: reviews all municipal solid waste (MSW) quantity audits conducted throughout the Regional District; compares these audits to the planning goals; manages the actions conducted by the working groups; screens working group recommendations before they are passed on to the Executive Committee; acts as a mediator in dispute resolutions; and reviews Plan amendments. The PMAC reports to the Regional District's Executive Committee through the Assistant Manager of Environmental Services.

The terms of reference for the PMAC is contained in Appendix F.

7.2 PLAN IMPLEMENTATION WORKING GROUP (PIWG)

The primary role of this informal Plan Implementation Working Group is to provide municipal input to manage, primarily, the implementation of major recycling and residual management programs, both from the municipalities and the Regional District, in order to ensure the efficient and successful implementation of this region's Solid Waste Management Plan. This group provides municipal input and technical expertise and effort as a support to the Plan Monitoring Advisory Committee (PMAC).

The membership of this working group is primarily the Regional District and Municipal technical representatives. However, this representation will be at the discretion of the PMAC and may vary from time to time depending upon the nature of the projects.

The terms of reference for the PIWG is contained in Appendix F.

7.3 PROMOTION AND EDUCATION WORKING GROUP (PPEWG)

The primary role of this informal Promotion and Education Working Group is to assist with the implementation and dispersion of major public education programs and promotional materials produced by the Regional District. This will ensure the efficient and successful implementation of the region's Solid Waste Management Plan. This group provides expertise and effort as a support to the Plan Monitoring Advisory Committee (PMAC). As a result of the Plan's emphasis on educating the public, this working group was formed to take advantage of the opportunity for the Regional District and member municipalities to work together on these programs. This will reduce effort duplication and costs by sharing media campaigns and promotional materials such as brochures.

The membership of this working group will primarily be Regional District and Municipal public educational representatives, as well as representatives from the media and recycling societies. This representation will be at the discretion of the
PMAC and may vary from time to time depending upon the nature of the projects.

The terms of reference for the PBEWG is contained in Appendix F.

7.4 FACILITY SITING WORKING GROUP (FSWG)

The primary role of this informal Facility Siting Group is to provide expertise to manage the siting of major facilities both from the municipalities and the Regional District in order to ensure compliance with the goals and provisions specified in the Solid Waste Management Plan. This group would provide technical expertise and effort as a support to the Plan Monitoring Advisory Committee (PMAC).

The membership of this working group will primarily be the Regional District, BC Environment, and Municipal technical representatives. This representation will be at the discretion of the PMAC however, and may vary from time to time depending upon the nature of the projects. The group would be made up of members directly involved with the particular project at hand.

This committee would meet on an as-needed basis as determined by the PMAC. A draft terms of reference for the FSWG is contained in Appendix F.

7.5 PLAN BYLAW ENFORCEMENT WORKING GROUP (PBEWG)

The primary role of this Bylaw Enforcement Working Group is to provide expertise to manage the implementation of major bylaws both from the municipalities and the Regional District in order to ensure the efficient and successful implementation and enforcement of the Solid Waste Management Plan. This group would provide technical expertise and effort as a support to the Plan Monitoring Advisory Committee (PMAC).

The membership of this working group will primarily be the Regional District and Municipal technical representatives and bylaw officers. This representation will be at the discretion of the PMAC however, and may vary from time to time depending upon the nature of the projects.

A draft terms of reference for the PBEWG is contained in Appendix F.
8.0 BOARD APPROVAL OF THE PLAN

The Board of Directors of the Fraser Valley Regional District reviewed this Plan at its regularly-scheduled Board meeting of August 27th, 1996, and passed the following resolution:

THAT the Fraser Valley Regional District Solid Waste Management Plan (Stage 3), as presented to the Board of Directors August 27th, 1996, be approved and forwarded to the Minister of Environment for final approval as the Solid Waste Management Plan covering the area of the Fraser Valley Regional District.

At the FVRD Board Meeting of November 26th, 1996, the Board of Directors passed the following resolutions:

THAT the letter from the Minister of Environment, Lands and Parks dated November 14, 1996 granting approval to adopt the FVRD’s Solid Waste Management Plan and requesting submission of a comprehensive bear/human conflict management strategy be received.

THAT the Fraser Valley Regional District Solid Waste Management Plan dated August, 1996 as approved by the Minister of the Environment on November 14, 1996 under Section 16(8) of the Waste Management Act, be adopted as the Fraser Valley Regional District’s Solid Waste Management Plan and that a copy of this resolution be forwarded to the Regional Waste Manager.

The FVRD Board of Directors reviewed this amended Plan at its Board Meeting of June 22, 1999, and passed the following resolution:

THAT the Solid Waste Management Plan - Amended June, 1999, and including all amendments and changes as specified in the Environmental Services Co-ordinator’s report dated 08 June 1999, be approved and forwarded to the Minister of Environment, Lands and Parks for final approval; AND FURTHER THAT the FVRD Administrator be authorized to approve any minor changes to the Solid Waste Management Plan that are requested by BC Environment prior to the Plan being sent to the Minister, provided these changes do not significantly alter the intent or policies of the Plan.

At the FVRD Board Meeting of February 22nd, 2000, the Board of Directors passed the following resolution:

THAT the Fraser Valley Regional District Solid Waste Management Plan (amended June, 1999) as approved by the Minister of Environment, Lands and Parks on February 9, 2000 pursuant to Section 18(7) of the Waste Management Act, be adopted as the Fraser Valley Regional District’s Solid Waste Management Plan.
1.0 GENERAL

The landfills that are covered under this Regional Solid Waste Management Plan are listed in Table C-1. These landfills shall be operated, closed and monitored in accordance with the June, 1993 Ministry of Environment, Lands and Parks (MELP) document "Landfill Criteria for Municipal Solid Waste" or MELP-approved exemptions. The FVRD will provide input to the MELP Regional Manager for the development of appropriate operational certificates for these landfills. This input will reflect the site specific nature and associated requirements for these landfills. The intent of this appendix is to outline the common and site specific nature of the operational certificate input information.

Table C-1 Landfills in the FVRD and their Status

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Permit Status</th>
<th>Permit Holder</th>
<th>Landfill Name/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR-1882(2)</td>
<td>Active</td>
<td>District of Chilliwack</td>
<td>Bailey Road - Matheson Road</td>
</tr>
<tr>
<td>PR-5984(1)</td>
<td>Active</td>
<td>Cultus Lake Parks Board</td>
<td>Cultus Lake</td>
</tr>
<tr>
<td>PR-2043(1)</td>
<td>Active</td>
<td>District of Mission</td>
<td>Minnie’s Pit</td>
</tr>
<tr>
<td>PR-516(1)</td>
<td>Inactive</td>
<td>The Corporation of the Village of Harrison Hot Springs</td>
<td>Harrison Hot Springs</td>
</tr>
<tr>
<td>PR-1504(1)</td>
<td>Closed</td>
<td>City of Abbotsford</td>
<td>McClure &amp; Threfhewey</td>
</tr>
<tr>
<td>PR-3955(1)</td>
<td>Closed</td>
<td>City of Abbotsford</td>
<td>McCallum Road</td>
</tr>
<tr>
<td>PR-8090(2)</td>
<td>Active</td>
<td>City of Abbotsford</td>
<td>Valley Road - Emergency Cell</td>
</tr>
<tr>
<td>PR-7232(2)</td>
<td>Closed</td>
<td>City of Abbotsford</td>
<td>Valley Road</td>
</tr>
<tr>
<td>PR-3770(3)</td>
<td>Inactive</td>
<td>Fraser Valley Regional District</td>
<td>Boston Bar</td>
</tr>
<tr>
<td>PR-7763</td>
<td>Active</td>
<td>Fraser Valley Regional District</td>
<td>North Bend</td>
</tr>
<tr>
<td>PR-2232(1)</td>
<td>Closed</td>
<td>The Corporation of the District of Kent</td>
<td>Agassiz</td>
</tr>
</tbody>
</table>
2.0 COMMON ACTIONS

The following actions will apply to all landfills in the FVRD.

2.1 PROHIBITED WASTES

The following wastes will generally be prohibited from being landfilled with general municipal solid waste within the FVRD:

- special wastes (as defined under the Special Waste Act);
- bulk liquids and semi-solids;
- used oil;
- wet cell batteries of any type or size;
- gypsum wall board - whole or pieces;
- automobiles, tires, "white" goods ('fridges, stoves, etc.), large metal objects;
- un-sterilized pathological human or animal biomedical waste;

Recyclable materials may be accepted and stored in a separate area. IF dead animals must be disposed of through burial, they must be buried in an area separate from the municipal solid waste. Biomedical waste may be landfilled with municipal solid waste only if it has been rendered non-pathogenic by an approved process and its burial area is covered with fresh solid waste or soil cover by the site operator immediately after deposit.

Wastes from outside the FVRD will normally not be accepted at any landfill within the FVRD unless prior authorization has been granted by the regulatory authority.

2.2 BANNED MATERIALS

In order to foster diversion of wastes away from landfills and towards recycling and composting, the operators of the municipal solid waste landfills within the FVRD will phase in material bans over the life of the Plan. These materials will likely include but not necessarily be limited to:

- Old Corrugated Cardboard
- Newspaper
- Other identifiable types of paper
- Plastics appropriate to the recycling market place
- Yard waste - grass clippings, tree prunings, etc.
- Land Clearing Debris - tree stumps, shrubbery, rocks, dirt, etc.
- Demolition Waste including lumber, concrete, asphalt, dirt, etc.

2.3 SEGREGATION AREAS

In order to foster reuse and recycling, and divert certain materials that are brought to the landfill for disposal from actually being buried in the landfill, segregation areas will be developed at each of the active landfills operating under the Plan. Examples of materials for which segregation areas may be provided could include:
white goods (appliances, water heaters, etc.)
- batteries of all types, both wet and dry
- autohulks
- other metals, in quantity
- yard waste - grass clippings, tree prunings, etc. - if part of a composting program located at or near the landfill(s) in question
- salvageable wood waste
- consumer goods including bicycles, lawnmowers, small electrical appliances
- other goods or materials as deemed appropriate to the situation

It should be noted that the FVRD, its member municipalities and/or other permit holders realize that the establishment of segregation areas at landfills requires that the areas be serviced to keep them from becoming above ground “dumps”. This will require that the landfill operators:

- police the off-loading of materials,
- periodically organize each segregation area, and
- organize, or assist in the organization, of materials processing and shipping to recyclable materials buyers.

2.4 SIGNAGE

Each landfill shall be provided with a site sign that includes:

- the site name
- site owner and site operator names
- phone number of a contact person
- emergency phone number(s)
- days and hours of operation
- a list of accepted materials
- a list of banned materials
- the tipping fee structure

2.5 LITTER CONTROL

Action will be taken at each landfill to prevent litter from leaving the site. These actions could include:

- minimization of the active working face
- proper orientation of the working face relative to the prevailing winds
- the use of temporary moveable litter fences near the working face
- appropriate cover-type and frequency for the given landfill situation
- site housekeeping operations

2.6 SITE ACCESS

In order to maintain control over the operation of the landfill, the materials brought to the landfill and activities at the landfill, wherever possible access to the landfills will be restricted.
Restricted access will be enforced through the use of appropriate barrier systems including lockable gates. Perimeter fencing may be required if gates alone are shown to be insufficient to control vehicle access. Landfill operators may choose to provide keys for the site locks to *bona fide* waste haulers provided the haulers sign appropriate agreements and/or waivers that will maintain the site operation and limit operators liability.

2.7 SALVAGING AND SCAVENGING

Scavenging of waste by the general public from active landfilling areas, i.e. the working face, is prohibited at all landfills within the FVRD. Salvaging of materials or goods will be encouraged by providing areas (located outside weigh scales) and/or facilities for the segregation of recyclable and reusable materials or goods. The landfill owner will have exclusive salvage rights to these materials and may or may not choose to permit the public or private firms to share in this salvage. The owner may choose to grant exclusive salvage rights to the contracted landfill operator or whoever the owner wishes. The holder of the exclusive salvage rights may choose to allow the public access to the salvage areas either for free or based on a fee structure of their choosing.

2.8 OPEN BURNING

Open burning of refuse at the landfill sites will be prohibited. Burning of segregated clean wood waste by the landfill operator may be conducted in accordance with operational certificate or special burning permits issued and monitored by the Regional MELP office.

2.9 OPERATION PLANS

In accordance with the operational certificate requirements, operating plans will be developed for each municipal solid waste landfill in the FVRD by the respective landfill operator(s). These operating plans will include, as a minimum, the following:

- a description of the general landfill operation
- a filling plan in words complemented by drawings:
  - landfill operation-type
  - grades and elevations
  - leachate control systems
  - cover requirements and frequency
  - a list of prohibited materials
  - the protocol for reducing animal/human conflicts
  - a description of the leachate monitoring program
  - determination of the landfill gas management requirements
  - reporting procedures
  - closure and post-closure plan and funds
  - site security arrangements
2.10 CLOSURE PLANS

Each holder of a landfill operational certificate shall develop a closure plan for each landfill under their control. These closure plans shall include, as a minimum, the following:

- currently anticipated date of closure
- a description of the work required to physically close the site
- the final shape of the landfill complete with contour and cross-section drawings
- the proposed final use of the landfill site after closure
- the long term leachate monitoring, site settlement and erosion control monitoring plans
- the estimated cost of closure and post-closure

2.11 REPORTING

Each holder of a landfill operational certificate shall prepare and submit an annual report for the MELP office. This report will include information regarding:

- weights or volumes of waste (by category, if possible) accepted at the landfill in the reporting year
- a record of the cover material volumes applied during the reporting year
- the weights or volumes of any recyclable materials that were stockpiled on site at the end of the reporting year
- the weights or volumes of any recyclable materials that were shipped off-site to materials users or brokers during the reporting year
- the total volume of landfill remaining and revised anticipated closure date
- the results of any leachate and/or landfill gas monitoring conducted in the previous year

Reporting for closed landfills will continue for a period of time appropriate for that site, up to a maximum of 25 years after closure

3.0 SITE SPECIFIC ACTIONS

3.1 SITE SUPERVISION

Each landfill owner, in conjunction with its landfill operator, will decide on the appropriate level of site supervision for their landfill. In general, each site will have restricted days or hours of operation and their will be site supervision during times that the landfill is opened. Some small landfills may or may not have site supervisors, depending on the situation and success of the owner to remain in compliance with their operational certificate without site supervision.

3.2 WASTE MEASUREMENT

The owners of the landfills realize that the best means of measuring the quantity of waste coming into the landfill is through the use of weigh scales. However, in many cases, the cost of such
scales is prohibitive even if tipping fees are charged on the basis of weight. On this basis, and as a means of assisting the FVRD with compiling its annual Solid Waste Management Plan report, landfill owners will either provide appropriate weigh scales and record-keeping computers or they will instruct their landfill operators to keep daily records of the volume of waste (by category, if possible) based on vehicle counts or other appropriate means.

3.3 LANDFILLING METHODS

The landfill owners, in conjunction with their site operators, will chose to operate their landfills as one of three types: trench, ramp or area, or combinations thereof. These operations shall comply with the Landfill Criteria for Municipal Solid Waste as well as the current landfill operation plan. Any substantive deviations would have to be approved by the MELP office.

3.4 COMPACTION AND COVER

The owners of the landfills within the FVRD realize that increased waste compaction increases the life of the landfill. However, the achievement of maximum waste density may require equipment beyond the financial capacity of the owner or landfill operator. As a result, the landfill owners and/or landfill operators will strive to maximize waste compaction and density subject to the limitations of their given equipment.

Cover materials and frequency will be appropriate for the given landfill site but will be in accordance with an agreement between the owner and MELP or a MELP approved filling plan. Where daily cover is needed, non-soil alternatives such as temporary tarps or spray foam systems may be considered as a means of reducing cover material use and increasing the life of the landfill.

3.5 ANIMAL MANAGEMENT

The owners of each landfill will assess the need for appropriate animal management protocols. Bear fences will not be installed unless the need for such action is appropriate and the Wildlife Branch of the MELP will co-ordinate and/or pay for simultaneous and on-going bear control and/or relocation programs.
MINISTRY OF ENVIRONMENT,
LANDS AND PARKS

DRAFT
OPERATIONAL CERTIFICATE
PR-XXXX

Under the Provisions of the Waste Management Act and in Accordance with the Fraser Valley Regional District Solid Waste Management Plan

Name of Facility Owner
Legal Address
City, British Columbia

is authorized to operate solid waste management facilities at, British Columbia, and is subject to the conditions listed below. Contravention of any of these conditions is a violation of the Waste Management Act and may result in prosecution.

1 Location of Authorized Facility(ies)

The location of the facility for the management of recyclable materials and municipal solid wastes to which this operational certificate is applicable is [lot description].

2 Management of Recyclable Materials

2.1. Recyclable Material Storage at the Landfill

2.1.1. The works authorized are a recyclable material storage area and related appurtenances approximately as shown on the attached site plan.

2.1.2. The maximum authorized quantity of recyclable materials which may be managed at the storage facility at any given time shall occupy an area no larger than 100 square meters and be no higher than four meters.

2.1.3. The characteristics of the recyclable materials which may be managed at the storage facility are municipal solid waste which may be reused or reprocessed into a useful and environmentally sound product.
2.2. *Windrow Composting Operation*

2.2.1. The works authorized are a windrow composting facility and related appurtenances approximately as shown on the attached site plan.

2.2.2. The maximum authorized quantity of compostable materials which may be managed at the composting facility at any given time is [? tonnes; cubic metres].

2.2.3. The characteristics of the recyclable materials which may be managed at the composting facility are those of yard wastes; sewage sludge; and other compostable but nonputrescible materials.

3 Management of Municipal Solid Waste

3.1. *Sanitary Landfill*

3.1.1. The works authorized are a sanitary landfill and related appurtenances approximately as shown on the attached site plan.

3.1.2. The maximum authorized rate at which the waste may be discharged to the landfill is [? tonnes; cubic metres per averaging period not to exceed one year].

3.1.3. The characteristics of the waste which may be discharged to the landfill are those of: municipal solid waste/demolition, land clearing and construction debris.

3.2. *Landfill Leachate Treatment Plant*

3.2.1. The works authorized are a leachate collection and treatment system and related appurtenances approximately as shown on the attached site plan.

3.2.2. The maximum authorized rate at which the treated leachate effluent may be discharged to the storm sewer is [? cubic metres per day].
4 Operating Plan

EITHER

An operating plan which addresses, but is not limited to, the design, operation, prohibited materials and/or discharges, monitoring, reporting, closure and post-closure care, security, liability and performance requirements for the facility(ies) authorized in Section 1 through Section 3, inclusive, shall be submitted for the approval of the Regional Waste Manager prior to the acceptance of recyclable materials and municipal solid waste at this site. Following approval of the operating plan by the manager, the facility shall be operated in accordance with the approved operating plan.

OR

The facility shall be operated in accordance with the [operating plan, title] as approved by the Regional Waste Manager in accordance with this certificate on [date].

AND

Written authorization from the Regional Waste Manager shall be obtained prior to implementing any changes to the approved operating plan. Based on any information obtained in connection with the(se) facility(ies), the operating plan may be extended or altered by the Regional Waste Manager, where in the opinion of the manager the extension or alteration is in accordance with this operational certificate.

5 Monitoring
6 Reporting
7 Security, Liability and Performance
8 Closure and Post-Closure

[At the discretion of the Regional Waste manager, items 5 - 8 may be included in the operating plan for the facility, rather than as separate sections].
MINISTRY OF ENVIRONMENT,
LANDS AND PARKS

OPERATIONAL CERTIFICATE
MR-15675

Under the Provisions of the Waste Management Act and in accordance with the Fraser Valley Regional District Solid Waste Management Plan

DISTRICT OF HOPE
PO Box 609
325 Wallace Street
Hope, British Columbia V0X 1L0

is authorized to manage municipal solid waste at the Hope Landfill, located approximately 4 kilometres north of Hope, British Columbia, subject to the conditions listed below. Contravention of any of these conditions is a violation of the Waste Management Act and may result in prosecution.

It is the responsibility of the operational certificate holder to ensure that all activities conducted under this operational certificate are carried out with due regard to the rights of third parties and comply with other applicable legislation that may be in force from time to time.

1. AUTHORIZED FACILITIES

1.1 This subsection applies to the discharge of municipal solid waste to a sanitary landfill authorized under the Fraser Valley Regional District Solid Waste Management Plan from sources within the Fraser Valley Regional District. The site reference number for this discharge is [Exxxxxx]. The discharge was previously authorized by Waste Management Permit PR-2751 and by the Town of Hope Solid Waste Management Plan.

1.1.1 The discharge is authorized until December 31, 2020.

1.1.2 The maximum authorized rate of discharge is 3,500 tonnes per year.

July 29/98

H.G. Maxwell
Assistant Regional Waste Manager

OPERATIONAL CERTIFICATE: MR-15675
1.1.3 Waste shall not be discharged into water or within a buffer zone as identified in Subsection 2.5. The burning of waste is prohibited.

1.1.4 The characteristics of the discharge shall be typical municipal solid waste, waste soil and other materials as specifically authorized by the Regional Waste Manager. Waste asbestos may be discharged in accordance with the Special Waste Regulations.

Materials prohibited from discharge are Special Waste (excluding asbestos), liquids, semi-solid waste, untreated biomedical waste and the following recyclable materials:

- used white goods,
- auto hulks and other large metallic waste,
- used tires,
- used lead acid batteries,
- corrugated cardboard originating from institutional and commercial sources,
- gypsum wallboard, and
- other materials which may be designated by the Regional Waste Manager when disposal alternatives become available.

1.1.5 The authorized works common to this Subsection and Subsections 1.2, 1.3 and 1.4 are a locking gate to control public access and a weigh scale, approximately located as shown on attached Site Plan A.

1.1.6 The authorized works specific to this subsection are those associated with a landfill operation and include existing works consisting of surface water diversionary works and leachate collection works; proposed works consisting of a hydraulic trap and interceptor trench for the proposed western lateral expansion and a liner system for the proposed southern lateral expansion; and related appurtenances approximately located as shown on attached Site Plan A.

The proposed works for the western and southern expansion areas shall be constructed and operational prior to the discharge of waste to the respective areas.

1.1.7 The location of the point of discharge is Lot 1, Sec. 28, Twp. 5, Range 26, W6M, YDYD, Plan 2379 and Lot 1, Plan 12458, Legal Subdivision 5, Sec. 27, Twp. 5, Range 26, W6M, YDYD, Lease #233623.
1.2 This subsection applies to the discharge of effluent from a leachate treatment facility. The site reference number for this discharge is [Exxxxx].

1.2.1 The maximum authorized rate of discharge is [28,800 cubic metres per year].

1.2.2 The characteristics of the discharge shall be:

- pH: 6.5 minimum, 8.5 maximum;
- Total suspended solids: 40 mg/L maximum;
- 5 day biochemical oxygen demand (BOD₅): 30 mg/L maximum;
- 96 hour fish bioassay (rainbow trout) LC₅₀: 100 % minimum;
- Ammonia: 10 mg/L nitrogen maximum;
- Iron (total): 3.0 mg/L maximum.

1.2.3 The authorized works specific to this subsection are designated treatment works including a leachate collection and pumping system, two (2) aeration ponds, minimum of two (2) aerators, flow measuring device and related appurtenances approximately located as shown on attached Site Plan A.

[Additional works required in order to comply with the discharge characteristics set out in Subsection 1.2.2 must be complete and operational by December 31, 2000.]

1.2.4 The discharge of untreated leachate to surface water, groundwater and land is prohibited.

1.2.5 The location of the point of discharge is Shadbolt Creek north-east of the area described in Subsection 1.1.7.

1.3 This subsection applies to a composting facility for yard wastes from sources within the Fraser Valley Regional District.

1.3.1 Type of the waste which may be composted is restricted to typical yard waste.

1.3.2 The authorized works specific to this subsection are those associated with a windrow composting facility and related appurtenances, approximately located as shown on attached Site Plan A.

1.3.3 The location of the facility is the same location as set out in Subsection 1.1.7.
1.4 This subsection applies to a recycling facility for the management of recyclable materials from sources within the Fraser Valley Regional District.

1.4.1 Materials managed at this facility are:
- metals,
- white goods,
- tires, and
- other recyclable materials acceptable to the Regional Waste Manager.

1.4.2 The authorized works specific to this subsection are those associated with a recycling facility and include storage areas and related appurtenances approximately located as shown on attached Site Plan A.

1.4.3 The location of the facility is the same location as set out in Subsection 1.1.7.

2. GENERAL REQUIREMENTS

2.1 Maintenance of Works

The operational certificate holder shall inspect the authorized works regularly and maintain them in good working order. Notify the Regional Waste Manager of any malfunction of these works.

2.2 Emergency Procedures

In the event of an emergency which prevents compliance with a requirement of this operational certificate that requirement will be suspended for such time as the emergency continues or until otherwise directed by the Regional Waste Manager provided that:

a. Due diligence was exercised in relation to the process, operation or event which caused the emergency and that the emergency occurred notwithstanding this exercise of due diligence;

b. The Regional Waste Manager is immediately notified of the emergency; and

c. It can be demonstrated that everything reasonably possible is being done to restore compliance in the shortest possible time.

Notwithstanding (a), (b), and (c) above, the Regional Waste Manager may require the authorized discharge to be suspended or reduced to protect the environment while the situation is corrected.
2.3 Plans - New Works

Plans and specifications of proposed works authorized in Subsection 1.1.6 shall be certified by a qualified professional licensed to practice in the Province of British Columbia, and submitted to the Regional Waste Manager. A qualified professional must certify that the works have been constructed in accordance with the plans before discharge to the expanded area of the landfill commences.

2.4 Site Preparation and Restoration

Provision of fencing, site access, vehicle safety barriers, surface water diversionary works, firebreaks and site restoration as required, shall be carried out to the satisfaction of the Regional Waste Manager.

2.5 Buffer Zones

The operational certificate holder shall maintain a minimum 15 metre buffer around the perimeter of the landfill. The buffer zone shall include a 5 metre firebreak which shall be maintained free of all vegetation and combustible materials.

2.6 Fire Prevention and Control

The operational certificate holder shall take all reasonable measures necessary to prevent fires from occurring at the site. Provide and maintain fire fighting equipment and materials to the satisfaction of the Regional Waste Manager.

The operational certificate holder is responsible for complying with all municipal fire safety requirements. In the event of a fire, immediately notify the local fire department, the Provincial Emergency Program and the Regional Waste Manager.
2.7 Wildlife Management

The operational certificate holder shall prepare a bear/human conflict strategy for the landfill authorized in Subsection 1.1 and the surrounding area, including the District of Hope. The strategy shall be implemented not later than April 30, 1999.

As part of the strategy, the operational certificate holder shall install and maintain an electrified bear fence around the perimeter of the landfill. Additional works may be required or other operating instructions may be issued by the Regional Waste Manager should a wildlife nuisance or hazard arise.

2.8 Waste Compaction and Covering

The working face shall be confined to the smallest practical area. Waste shall be discharged in layers of 0.6 metres or less and compacted to the smallest practical volume. Daily cover, consisting of a minimum 0.15 metres of suitable cover material, shall be applied to the working face at the end of each operating day. The Regional Waste Manager may vary the frequency of covering when freezing conditions adversely affect normal operation. Intermediate cover, consisting of a minimum 0.30 metres of suitable cover material, shall be applied within thirty (30) days to any area of the landfill which will not receive any further waste for a period of thirty (30) days.

For the purpose of this clause, suitable cover is defined as soil or other material acceptable by the Regional Waste Manager.

2.9 Completed Areas of the Landfill

The operational certificate holder shall apply final cover to any area of the landfill which will not receive any further waste. Final cover shall be applied within ninety (90) days of completing the subject area.

Final cover shall consist of a minimum of 1.0 metre of low permeability (<1 x 10⁻⁸ cm/s) compacted soil (or equivalent) cap plus a minimum of 0.15 metre of topsoil and suitable vegetative cover. Final cover shall be sloped a minimum of 4:1 to promote surface water runoff. Surface water runoff shall be directed to the surface water diversionary ditches or off-site. Side slopes shall be a maximum of 3:1 (horizontal:vertical).
2.10 Contaminated Soil

The operational certificate holder is authorized to utilize contaminated soil for final cover, top dressing and landscaping, in accordance with the Waste Management Act and its regulations. The concentration of any substance in the soil shall not be greater than the urban park land (PL) standard, as set forth in the Contaminated Sites Regulation. Soil that does not meet this standard, except soil classified as special waste, shall be managed as waste or used for daily or intermediate cover.

2.11 Posting of Signs

The operational certificate holder shall post a sign, to the satisfaction of the Regional Waste Manager, at the entrance of the landfill site with the following current information:

- site name,
- owner and operator,
- contact telephone number and address for the owner and operator,
- telephone number in case of emergency,
- hours of operation,
- materials and wastes accepted for recycling and landfilling,
- prohibited materials and wastes, and
- tipping fees.

Additional directional and information signs, as required, shall be posted on site.

2.12 Management of Recyclable Materials

The amount of recyclable materials accumulated at the facility authorized in Subsection 1.3 shall be limited to the maximum which can be properly managed at the site.
2.13 Geotechnical Assessment

The operational certificate holder shall submit a geotechnical evaluation of the landfill authorized in Subsection 1.1 acceptable to the Regional Waste Manager, by December 31, 1998. The evaluation shall address stability, erosion, settlement, etc. The assessment shall be reviewed and updated every five (5) years. Actions recommended in this assessment and subsequent reviews shall be incorporated into the design and operating plan as required in Subsection 2.16.

The assessment, and subsequent reviews, shall be conducted by a qualified professional licensed to practice in the Province of British Columbia.

2.14 Landfill Gas Assessment

The operational certificate holder shall assess the potential for generation of non-methane organic compounds (NMOC's) and submit a report to the Regional Waste Manager by December 31, 1998. The assessment shall be reviewed and updated annually. Actions recommended in the assessment and subsequent reviews shall be incorporated into the revised design and operating plan as required in Subsection 2.16.

The assessment, and subsequent reviews, shall be conducted by a qualified professional licensed to practice in the Province of British Columbia.

Should the assessment or subsequent review indicate that the NMOC's will exceed 150 tonnes/year, then the permittee shall prepare a landfill gas management plan, acceptable to the Regional Waste Manager. The plan shall include:

a. current and future generation rates of methane and non-methane organic compounds (NMOC) supported by analytical data;
b. plant and accompanying design for landfill gas treatment and beneficial reuse before closure and for a minimum post-closure period of 25 years;
c. a proposed monitoring program for landfill gas before closure and for a minimum post-closure period of 25 years.

The manager may require the installation and operation of recovery and pollution prevention works, including monitoring wells, after completion of the assessment or subsequent review.
2.15 **Legal Survey**

The operational certificate holder shall register a covenant, not later than December 31, 1998, that the property described in Subsection 1.1.7 was used for the purpose of waste disposal as a charge against the title to the property. Notify the Regional Waste Manager of the registration of the covenant.

2.16 **Design and Operating Plan**

The operational certificate holder shall submit a design and operating plan for the facilities authorized in Section 1, acceptable to the Regional Waste Manager, by December 31, 1998. The plan shall be certified by a qualified professional licensed to practice in the Province of British Columbia, and shall include, but is not limited to, information regarding:

- a fill plan designed so that the landfill may be closed in 1999 with adequate environmental protection measures and consideration for the future use of the site. The fill plan should also be designed to minimize the area of the landfill to which final cover has not been applied;
- total anticipated waste quantities;
- daily, intermediate and final cover including types of materials used;
- surface water diversion measures;
- measures to minimize leachate generation;
- leachate collection;
- implementation of geotechnical measures as may be recommended in the geotechnical evaluation required in Subsection 2.15;
- slope stability;
- fire prevention measures;
- incoming waste inspection and staff supervision on the active face;
- measures to minimize hazards to public safety; and
- measures to control vectors, odours, dust, wind-blown litter and scavenging.

The operational certificate holder shall operate the landfill in accordance with the design and operating plan.

The operational certificate holder shall review the plan for the landfill operation on an annual basis. Any revisions to the plan shall be submitted to the Regional Waste Manager as part of the annual report required in Subsection 3.5.2.
2.17 Closure/Post-closure Funding

The operational certificate holder shall establish and maintain, during the life of the landfill, a dedicated reserve fund in a form acceptable to the Regional Waste Manager, sufficient to finance closure, post-closure and environmental contingencies related to the landfill. The operational certificate holder shall submit a report to the manager by December 31, 1998 detailing the estimated cost of carrying out closure and post-closure activities for a minimum post-closure period of twenty five (25) years and how the fund will be accrued. The estimated costs of closure and post-closure activities shall be updated annually and reported to the manager. Should the estimated costs of closure and post-closure increase then the operational certificate holder shall increase the fund accordingly.

2.18 Landfill Closure Plan

The operational certificate holder shall submit a closure plan for the landfill authorized in Subsections 1.1 at least six (6) months prior to the closure of the landfill to the Regional Waste Manager for approval. The plan shall include information regarding:

- estimated total waste volumes and tonnage and the closure date;
- a topographical plan showing the final elevation contours of the landfill and surface water diversion and drainage controls;
- design of the final cover including the thickness and permeability of barrier layers and drainage layers and information on topsoil, vegetative cover and erosion prevention controls;
- procedures for notifying the public about the closure and alternative waste disposal facilities;
- rodent and nuisance wildlife control procedures;
- proposed end use of the property after closure;
- a plan for monitoring groundwater, surface water, landfill gas, erosion and settlement for a minimum post-closure period of 25 years; and
- a plan for the operation of any required pollution abatement engineering works such as leachate and landfill gas collection/treatment systems for a minimum post-closure period of 25 years.
3. MONITORING AND REPORTING REQUIREMENTS

3.1 Waste and Recyclable Materials Reporting

The operational certificate holder shall record the quantity of waste and recyclable materials received at the landfill and recycling facilities. Also, the quantity and destination of recyclable materials removed from these facilities shall be recorded. Records shall be in tonnes.

3.2 Leachate and Receiving Environment Monitoring

3.2.1 Sampling and Analyses

The operational certificate holder shall maintain leachate, surface water and groundwater monitoring stations, approximately located as shown on the attached Site Plan A, and as outlined in Table 1. The exact locations are to be determined in the field. Obtain grab samples at each station and analyze for each parameter at a frequency as indicated in Table 2.

Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.

<table>
<thead>
<tr>
<th>Reference #</th>
<th>Station</th>
<th>General Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3</td>
<td>Leachate Monitoring Stations</td>
<td>leachate pond discharge at weir</td>
</tr>
<tr>
<td>[#]</td>
<td>#6</td>
<td>untreated leachate</td>
</tr>
<tr>
<td>[#]</td>
<td>Surface Water Stations</td>
<td>Shadbolt Creek, west of the landfill</td>
</tr>
<tr>
<td>[#]</td>
<td>#1</td>
<td>Shadbolt Creek, immediately upstream of the confluence with the leachate pond discharge</td>
</tr>
<tr>
<td>[#]</td>
<td>#2</td>
<td>Shadbolt Creek, 100 m downstream of the confluence with the leachate pond discharge</td>
</tr>
<tr>
<td>[#]</td>
<td>#5</td>
<td>Shadbolt Creek, upstream approximately 150 m south of the landfill</td>
</tr>
<tr>
<td>[#]</td>
<td>BH3</td>
<td>approximately 30 m south-east of the west aeration pond</td>
</tr>
<tr>
<td>[#]</td>
<td>BH4</td>
<td>approximately 40 m east south-east of the west aeration pond</td>
</tr>
<tr>
<td>[#]</td>
<td>BH5</td>
<td>approximately 10 m north of the west aeration pond</td>
</tr>
<tr>
<td>[#]</td>
<td>BH6</td>
<td>approximately 60 m south-east of the west aeration pond</td>
</tr>
</tbody>
</table>
### Table 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>leachate</th>
<th>surface water</th>
<th>groundwater</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td></td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>temperature</td>
<td>°C</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>dissolved oxygen</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>specific conductivity</td>
<td>μmhos/cm</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>total suspended solids</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>5-day biochemical oxygen demand</td>
<td>mg/L</td>
<td>quarterly</td>
<td>not required</td>
<td>not required</td>
</tr>
<tr>
<td>total organic carbon</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>not required</td>
</tr>
<tr>
<td>ammonia</td>
<td>mg/LN</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>nitrate</td>
<td>mg/LN</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>nitrite</td>
<td>mg/LN</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>hardness (as CaCO₃)</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>chloride</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>sulphate</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>arsenic, dissolved</td>
<td>mg/L</td>
<td>not required</td>
<td>not required</td>
<td>quarterly</td>
</tr>
<tr>
<td>chromium, dissolved</td>
<td>mg/L</td>
<td>not required</td>
<td>not required</td>
<td>quarterly</td>
</tr>
<tr>
<td>copper, total</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>not required</td>
</tr>
<tr>
<td>copper, dissolved</td>
<td>mg/L</td>
<td>not required</td>
<td>not required</td>
<td>quarterly</td>
</tr>
<tr>
<td>iron, total</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>not required</td>
</tr>
<tr>
<td>iron, dissolved</td>
<td>mg/L</td>
<td>not required</td>
<td>not required</td>
<td>quarterly</td>
</tr>
<tr>
<td>lead, total</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>not required</td>
</tr>
<tr>
<td>lead, dissolved</td>
<td>mg/L</td>
<td>not required</td>
<td>not required</td>
<td>quarterly</td>
</tr>
<tr>
<td>tin, dissolved</td>
<td>mg/L</td>
<td>not required</td>
<td>quarterly</td>
<td>quarterly</td>
</tr>
<tr>
<td>zinc, total</td>
<td>mg/L</td>
<td>quarterly</td>
<td>quarterly</td>
<td>not required</td>
</tr>
<tr>
<td>zinc, dissolved</td>
<td>mg/L</td>
<td>not required</td>
<td>not required</td>
<td>quarterly</td>
</tr>
<tr>
<td>96 hour fish bioassay (rainbow trout)-L-C₅₀</td>
<td>%</td>
<td>quarterly</td>
<td>quarterly</td>
<td>not required</td>
</tr>
</tbody>
</table>

#### Table 2 Explanatory Notes:
1. Analysis is to be conducted in situ.

#### 3.2.1 Leachate Flow Measurement

The operational certificate holder shall provide and maintain a suitable flow measuring device and record the volume of leachate discharged over a 24 hour period once per week.
3.2.2 Slope Stability Monitoring

The operational certificate holder shall install and maintain a minimum of five survey monuments (M1-5) and two monitoring wells (BH1, BH2) approximately located as shown on attached Site Plan A, and monitor slope stability once per year. Should monitoring indicate that there are displacements of greater than 25 mm/year in the downslope direction, the frequency of monitoring shall be increased to 4 times per year.

3.3 Monitoring Procedures

3.3.1 Sampling and Flow Measurement

Sampling and flow measurement shall be carried out in accordance with the procedures described in "British Columbia Field Sampling Manual for Continuous Monitoring plus the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment and Biological Samples", 1996 Edition (Permittee), 312 pp., or by suitable alternative procedures as authorized by the Regional Waste Manager.

Copies of the above manual are available from the Environmental Protection Division, Ministry of Environment, Lands and Parks, 777 Broughton Street, Victoria, British Columbia, V8V 1X5, and are also available for inspection at all Environmental Protection offices.

3.3.2 Chemical Analyses

Analyses shall be carried out in accordance with procedures described in the latest version of "BRITISH COLUMBIA ENVIRONMENTAL LABORATORY MANUAL for the Analysis of Water, Wastewater, Sediment and Biological Materials, (March 1994 Permittee Edition)", or by suitable alternative procedures as authorized by the Regional Waste Manager.

A copy of the above manual may be purchased from Queen's Printer Publications Centre, 2nd Floor, 563 Superior Street, Victoria, British Columbia, V8V 4R6 (1-800-663-6105). A copy of the manual is also available for inspection at all Environmental Protection offices.
3.3.3 Quality Assurance

All data analyses required to be submitted by the permit shall be conducted by a laboratory acceptable to the Regional Waste Manager. At the request of the manager, the operational certificate holder shall provide the laboratory quality assurance data, associated field blanks, and duplicate analysis results along with the submission of data required under Section 3. of the operational certificate.

3.4 Records Management

The operational certificate holder shall maintain the following information and records, current and suitably tabulated, at the landfill office for inspection:
- a copy of Operational Certificate MR-15675;
- training procedures and personnel training records;
- contingency plans and notification procedures;
- the current design and operating plan;
- inspection records from staff and regulatory agencies;
- background hydrogeological and geotechnical reports;
- landfill gas assessments;
- incoming waste, and soil records;
- records of recyclable materials shipped off site;
- slope stability data;
- environmental monitoring results and interpretations; and
- annual operating and monitoring reports for the previous year.

3.5 Reporting

3.5.1 Semi-annual Report

Maintain data of analyses and records of waste and recyclable material quantities for inspection and submit the data suitably tabulated, to the Regional Waste Manager for the previous six (6) months. The reporting period ends March 31 and September 30. All reports shall be received by the manager within 31 days of the end of the reporting period.
3.5.2 Annual Report

The operational certificate holder shall prepare an annual report which shall include:

- a review and interpretation of the analytical data from receiving environment monitoring for the preceding year;
- a slope stability analysis;
- revised closure/post closure costs;
- revised design and operating plan and planned improvements;
- identification of operating problems and corrective actions taken; and
- an evaluation of the recycling and composting programs including waste diversion projections.

The annual report shall be submitted within the first sixty (60) days of each calendar year.
Under the Provisions of the Waste Management Act

REGIONAL DISTRICT OF FRASER-CHEAM
8430 Cessna Drive
Chilliwack, British Columbia
V2P 7K4

is authorized to discharge refuse to the land located in North Bend, British Columbia, subject to the conditions listed below. Contravention of any of these conditions is a violation of the Waste Management Act and may result in prosecution.

1. Authorized Discharge

The discharge of refuse to which this permit is applicable is from North Bend, Boston Bar, and surrounding areas.

1.1 The maximum rate of discharge is 13.5 cubic metres per day.

1.2 The components of the discharge are those typical of municipal refuse, septic tank pumpings, and other selected materials specifically authorized by the Regional Waste Manager. Materials specifically excluded from discharge are (i) special waste, and (ii) the following specified recyclable materials:

(a) used white goods,
(b) auto hulks,
(c) used tires,
(d) used lead acid batteries, and
(e) other materials which may be designated by the Regional Waste Manager when alternatives to disposal become available.

Issue Date: November 25, 1987
Amended Date: JUL 22 1993 (most recent)

E.M. Lawson
Assistant Regional Waste Mana...
1.3 The works authorized are those associated with a landfill operation, including a 5 metre firebreak, fence, and ditching located approximately as shown on the attached site plan (Appendix A).

1.4 The location of the point of discharge is unsurveyed portion of legal subdivisions 5 and 12, Sec. 14, and legal subdivisions 8 and 9, Sec. 15, all of Twp. 11, R. 26, W6M, YDYD, west of CPR R/W and south of Blk. A, Sec. 14, Twp. 11, R. 26, W6M, YDYD.

2. General Requirements

2.1 Landfill Operation

All refuse shall be confined to the smallest practical area and reduced to the smallest practical volume at the operating face of the landfill. The Permittee shall apply a minimum 0.15 m of suitable cover material on all exposed solid waste a minimum of two times per week. The Regional Waste Manager may vary the frequency of covering when freezing conditions adversely affect normal operation.

2.2 Wildlife Nuisance

The subject discharge is one of concern because of the possibility of a nuisance or hazard being caused by bears or other animals attracted to the site. Additional works may be required or other operating instructions may be issued by the Regional Waste Manager if such problems arise.

2.3 Site Preparation and Restoration

Provision of fencing, site access, vehicle safety barriers, surface water diversionary works, firebreaks and site restoration as required, shall be carried out to the satisfaction of the Regional Waste Manager.

2.4 Leachate Collection and Treatment

Although leachate collection and treatment is not required at this time, a standby area shall be held in reserve for leachate collection and treatment facilities.

2.5 Groundwater Monitoring Wells

Installation of groundwater wells may be required in the future. The number, location, and structural details of these facilities are subject to the approval of the Regional Waste Manager.

2.6 Landfill Development

The landfill site shall be developed from the low area to the east and progress to the west as terraces. Cells shall be prepared with a compacted earth berm built prior to placing refuse in the cell. Berms shall be adequately sloped to ensure stability and shall be protected against erosion.

Issue Date: November 25, 1987
Amended Date: JUL 22 1983

E.M. Lawson
Assistant Regional Waste Manager
2.7 Management of Recyclable Materials

Areas shall be set aside on the landfill site for the collection and storage of recyclable materials. These facilities shall be designed and operated in a manner acceptable to the Regional Waste Manager to prevent the discharge of leachate, control vectors, and minimize nuisance conditions such as odours. Recyclable materials shall be removed from the landfill site regularly, and the amounts accumulated shall be limited to the maximum which can be properly managed at the site.

2.8 Operating Plan

The Permittee shall submit a revised operating plan for the landfill on or before September 30, 1993, for approval of the Regional Waste Manager. The revised plan shall include operational improvements to meet Ministry landfill criteria; management of special waste and recyclable materials; and site security. The plan shall specify maximum quantities of recyclable materials to be stored on site. Landfilling and materials recycling shall be in accordance with the approved operating plan.

2.9 Closure Plan

A Closure Plan is to be submitted for approval of the Regional Waste Manager on or before December 31, 1993. The plan should provide details on final slopes, grading, material for final cover and method of placement, top dressing and vegetative cover, site maintenance, surface water diversion, ground and surface water monitoring and landfill gas management as applicable.

2.10 Septic Tank Pumpings

Septic tank pumpings shall be discharged to a location on site and in a manner acceptable to the Regional Waste Manager. Signs shall be posted identifying the nature of the discharge.

Issue Date: November 25, 1987
Amended Date: JUL 22 1993
Page 25
PERMIT
Under the Provisions of the Waste Management Act

DISTRICT OF CHILLIWACK
8550 Young Road South
Chilliwack, British Columbia
V2P 4P1

is hereby authorized to discharge refuse
from municipal and other sources
located in the District of Chilliwack
to the land at a site on Matheson Road, Chilliwack.

This permit has been issued under the terms and
conditions prescribed in the attached appendices:
G-1, A-1, B-1, C-1 and C-2.

E. M. Lawson
Assistant Regional Waste Manager
Permit No. PR-1822

Date Issued: February 7, 1974
Date Amended: November 27, 1981
December 8, 1987
JUN 15 1992
(A) The discharge of refuse to which this appendix is applicable is from the District of Chilliwack, the District of Kent, the Village of Harrison Hot Springs and Electoral Areas D and E of the Regional District of Fraser-Cheam.

(B) The rate at which refuse may be discharged is a daily maximum of 200 tonnes.

(C) The type of refuse which may be discharged is municipal.

(D) The components of the refuse which may be discharged are typical municipal refuse, excluding special wastes.

(E) The works authorized are those associated with a landfill operation as directed in Appendix B-1, and a leachate collection and pumping system to municipal sewer, approximately located as shown on the attached Appendix A-1.

(F) The land to which the refuse is to be discharged and to which this appendix is appurtenant is NW. 1/4 of SE. 1/4 of Section 8, Township 26, E.C.M., save and except portion of Plan 25256, NWD.

(G) The works authorized must be complete and in operation on and from the date of this appendix.
LEGEND

- Groundwater monitoring wells.
- Surface water sampling locations.

LEGAL DESCRIPTION OF SITE

NW.1/4 of SE.1/4 of Section 8, Township 26, E.C.M., save and except portion of Plan 2525 NWD.

DISTRICT OF CHILLIWACK

(Place of application)

(Dec. 8, 1987)

(Permission of application)

(Dec. 15, 1982)

Assistant Regional Waste Manager

Appendix A-1 to Permit No. PR-1822
APPENDIX B-1

APPENDIX B-1

A. LANDFILL OPERATION

The Permittee shall maintain the landfill authorized in Appendix 01 as a Level "A" operation in accordance with the Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia, dated September, 1975, which, in normal conditions, requires that cover material be applied daily. The Regional Waste Manager may vary the frequency of covering when freezing conditions adversely affect normal operation.

B. OPERATING PLANS

The Permittee shall follow the Operating Plans outlined below:

(1) Landfill the refuse in one lift to a height of 3.0 m and cover with an intermediate layer of sand and gravel of 0.2 m minimum thickness. The refuse shall be landfilled in cellular structures.

(2) Provide and maintain surface drainage ditches to divert surface runoff water around the landfill site. Additional ditches and/or modifications to the existing ditches may be required as the landfill progresses.

(3) Install and maintain surface drain pipes to discharge runoff from the landfill surface to adjacent drainage ditches. The runoff may be required to be discharged to the municipal sewer system if it is contaminated by the refuse disposal, as determined by the Regional Waste Manager.

(4) Maintain the landfill slopes approximately 2.5 H to 1.0 V and cover the slopes with 0.2 m thickness of gravel and cap with a 0.6 m layer of clay. The slopes are to be seeded with suitable vegetation cover. These procedures shall continue as the landfill rises in elevation until the final landfill area reduces to approximately 1.5 ha.

(5) The final landfill surface area shall be covered with 1.0 m of clay and sloped approximately 2% grade towards the North. Suitable vegetation cover shall be grown to facilitate drainage of runoff and minimize erosion.
1. LEACHATE, GROUNDWATER AND SURFACE WATER MONITORING

(1) GRAB SAMPLING

The Permittee shall install suitable sampling facilities and obtain grab samples for analyses as indicated below. Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Leachate</th>
<th>Groundwater Wells</th>
<th>Surface Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water level, m</td>
<td></td>
<td>P1, P2, P3, P4, P5</td>
<td>S1, S2</td>
</tr>
<tr>
<td>Conductivity, µmhos/cm</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>pH</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>BOD5, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Total phosphorus, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Ammonia nitrogen, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Nitrate, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Sulphate, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Sulphide, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Alkalinity, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Chloride, mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Copper (total), mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Zinc (total), mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Iron (total), mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Cadmium (total), mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
<tr>
<td>Lead (total), mg/L</td>
<td>Q</td>
<td>Q</td>
<td>Q</td>
</tr>
</tbody>
</table>

Sampling Frequency: M = monthly  
Q = quarterly

Sampling Locations: P1, P2, P3, P4, P5 and S1 and S2 as shown on Appendix A-1.

(2) ANALYSES

Analyses are to be carried out in accordance with procedures described in the second edition of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments and Biological Materials (1976 edition including updates)", April 1989, 615 pp., or by suitable alternative procedures as authorized by the Regional Waste Manager.

Copies of the above manual are available from the Environmental Protection Division, Ministry of Environment, 777 Broughton Street, Victoria, British Columbia, V8V 1X5, at a cost of $70.00, or if Part 1 only, 1976 edition, 389 pp., $40.00 and Part 2 only, supplement, 226 pp., $40.00, and are also available for inspection at all Environmental Protection Offices.

(3) LEACHATE FLOW MEASUREMENT

The Permittee shall measure the rate of pumping the leachate and record the time of pumping continuously.

Date Issued December 8, 1987  
Date Amended JUN 15 1992  
Assistant Regional Waste Manager
APPENDIX C-2

1. LEACHATE, GROUNDWATER AND SURFACE WATER MONITORING...cont'd

(4) REPORTING

Maintain date of analyses and leachate flow measurements for inspection and submit the date, suitably tabulated, to the Regional Waste Manager quarterly. The next report is to be submitted by March 31, 1993.

2. SURVEILLANCE PROGRAM FOR THE LANDFILL OPERATION

(1) WEIGHT SCALE RECORDS

The Permittee shall maintain the weight scale daily records of the quantities and types of wastes going into the landfill.

(2) ANNUAL SURVEY OF THE LANDFILL

The Permittee shall conduct an annual survey of the height, contour, surface area and settlement of the landfill.

(3) ANNUAL REPORT

The Permittee shall submit to the Regional Waste Manager an annual report on or before March 31 of the following year, summarizing the findings of monitoring and surveillance with interpretation and plans for the next year's operation.
PERMIT

Under the Provisions of the Waste Management Act

DISTRICT OF MISSION
8645 Stave Lake Street
P.O. Box 20
Mission, British Columbia
V2V 4L9

is hereby authorized to discharge refuse
from District of Mission
located approximately 1 km east of Stave Falls
to the land.

This permit has been issued under the terms and
conditions prescribed in the attached appendices:
A-1, A-1, B-1, B-2 and C-1.

Date Issued June 18, 1973
Date Amended October 26, 1982

MAY 26, 1986
(a) The discharge of refuse to which this appendix is applicable is from municipal and other sources in the District of Mission.

(b) The rate at which refuse may be discharged is 200 cubic metres per day.

(c) The type of refuse which may be discharged is municipal.

(d) The components of the refuse which may be discharged are those typical of municipal refuse and septic tank pumpings.

(e) The works authorized are those associated with a landfill operation with regulated burning approximately located as shown on the attached Appendix A-1.

(f) The land to which the refuse is to be discharged and to which this appendix is appurtenant is Portions of NE 1/4 and L.S. 7 & 8, SE 1/4, Sec. 19, Twp. 18, NWD, Plan 13712, including B.C.H. & P.A. R/W Plan 16137.

(g) The works authorized must be complete and in operation on and from the date of this Appendix.

Date Issued June 18, 1973

Date Amended October 26, 1982

MAY 26 1986

Regional Waste Manager
LEGAL DESCRIPTION:

Portions of NE 1/4 and L.S. 7 and 8, SE 1/4, Sec. 19, Twp. 18, N.W.D., Plan 13712, including B.C.H. & P.A. R/W Plan 16137
A. LANDFILL OPERATION

The Permittee shall maintain the landfill authorized in Appendix 01 as a Level "A" operation in accordance with the Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia, dated September 1975, which, in normal conditions, requires that cover material be applied daily. The Regional Waste Manager may vary the frequency of covering when freezing conditions adversely affect normal operation.

B. SITE PREPARATION AND RESTORATION

Provision of fencing, site access, vehicle safety barriers, surface water diversionary works, leachate control works, firebreaks and site restoration as required, shall be carried out to the satisfaction of the Regional Waste Manager.

Leachate generation shall be minimized by applying a minimum compacted thickness of 0.6 m of semi-impermeable material as final cover immediately after the final surface elevation is reached. The final cover shall have a minimum of 1% slope and the runoff shall be diverted from the refuse site.

C. SEGREGATION OF METALLIC WASTES

Segregate large metallic waste such as appliances and auto bodies, etc., for disposal in a separate area of the site.

D. OPERATIONAL REQUIREMENTS FOR REGULATED OPEN BURNING OF SELECTED NON PUTRESCIBLE MATERIALS FROM MUNICIPAL AND INDUSTRIAL SOURCES

(1) Area

The operation shall be restricted to an area on the site which is satisfactory to the Regional Waste Manager. If required, this area shall be fenced to restrict access to the burn area stockpile.

Date Issued October 26, 1982
Date Amended MAY 26 1986
D. OPERATIONAL REQUIREMENTS FOR REGULATED OPEN BURNING OF SELECTED NON-PUTRESCIBLE MATERIALS FROM MUNICIPAL AND INDUSTRIAL SOURCES

(2) Quantity and Frequency

The maximum quantity of wastes to be treated is 40 m³ per burn at a frequency not to exceed once per week. Each burn shall comprise one continuous period necessary to reduce the stockpiled waste to ashes.

(3) Nature of Wastes

Generally, no waste shall be burned which is unacceptable to the Regional Waste Manager. Acceptable materials may include selected demolition refuse, stumps, trees and similar items, but excluding nuisance causing combustibles such as rubber, plastics, tars, insulation, etc.

(5) Timing

Burning shall take place only when an attendant is on duty and when conditions promote rapid combustion and dispersion of combustion products. Materials shall be charged to the facility in a manner to promote best combustion and restrict the uplift of lighter constituents. No burning shall take place during periods of fire hazard nor when burning is prohibited by other government agencies.

(6) Fire Control

Suitable approved devices shall be available for extinguishing fires to prevent them from spreading to surrounding areas. Such devices may include a pressurized water supply or chemical type fire extinguishers, or an earth stockpile. If an earth stockpile is contemplated for fire control, earth moving equipment shall be available at the site during burning. A fireguard shall be cleared and maintained free of combustible materials.

(7) Residue of Combustion

As soon as the residue of combustion has cooled to ambient temperature it shall be incorporated into the adjacent landfill.

Date Issued: MAY 26, 1986

Date Amended: ____________________

Regional Waste Manager
1. CREEK SAMPLING

The Permittee shall obtain grab samples of creek water from Steelhead Creek upstream and downstream of the landfill site as shown on Appendix A-1. Samples shall be obtained once each three months. Proper care should be taken in sampling, storing, and transporting the samples to adequately control temperature and avoid contamination, etc.

2. ANALYSES

Obtain analyses of the sample for the following:

(1) pH;
(2) Specific conductivity, \( \mu \)hos/cm;
(3) Chloride, mg/L (Cl);
(4) Ammonia nitrogen, mg/L (N);
(5) Chemical oxygen demand, mg/L;
(6) Sulphate, mg/L (SO₄).

Analyses are to be carried out in accordance with procedures described in the second edition (February, 1976) of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments, and Biological Materials", or by suitable alternative procedures as approved by the Regional Waste Manager.

Copies of the above mentioned manual are available from the Environmental Laboratory, 3650 Wesbrook Crescent, Vancouver, British Columbia, V6S 2L2, at a cost of $10.00 and are also available for inspection at all Waste Management Offices.

3. REPORTING

Maintain data of analyses for inspection and submit the data, suitably tabulated, to the Regional Waste Manager for the previous year. The next report is to be submitted by January 31, 1987.

Date Issued October 26, 1982
Date Amended MAY 20 1986

Regional Waste Manager
# FVRD Landfill Sites - Banned and Recycled Items

<table>
<thead>
<tr>
<th>Abbotsford</th>
<th>Chilliwack</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Matsqui Transfer Station</strong></td>
<td><strong>Bailey Landfill</strong></td>
</tr>
<tr>
<td>(Cache Creek Landfill) (604) 853-0508</td>
<td>(604) 793-2907</td>
</tr>
<tr>
<td>ONP (old newspapers) &amp; OCC (cardboard)*</td>
<td>ONP (old newspapers) &amp; OCC (cardboard)*</td>
</tr>
<tr>
<td>Mixed Paper, Magazines, Boxboard*</td>
<td>Mixed Paper, Magazines, Boxboard*</td>
</tr>
<tr>
<td>Office Paper (mixed grades)*</td>
<td>Office Paper (mixed grades)*</td>
</tr>
<tr>
<td>Cans/Metal Food Containers*</td>
<td>Cans/Metal Food Containers*</td>
</tr>
<tr>
<td>Ferrous &amp; Non-ferrous Scrap Metal*</td>
<td>Ferrous &amp; Non-ferrous Scrap Metal*</td>
</tr>
<tr>
<td>Batteries (Auto &amp; Household)*</td>
<td>Batteries (Auto &amp; Household)*</td>
</tr>
<tr>
<td>Waste Oil &amp; Oil Filters</td>
<td>Waste Oil*</td>
</tr>
<tr>
<td>White Goods*</td>
<td>White Goods*</td>
</tr>
<tr>
<td>Gypsum Board*</td>
<td>Rubber Tires*</td>
</tr>
<tr>
<td>Rubber Tires*</td>
<td>Rubber Tires*</td>
</tr>
<tr>
<td>Poultry Mort</td>
<td>Gypsum Board*</td>
</tr>
<tr>
<td>Hazardous Materials</td>
<td>Hazardous Materials</td>
</tr>
<tr>
<td>Raw Sewage &amp; Septic Sludge</td>
<td>Raw Sewage &amp; Septic Sludge</td>
</tr>
<tr>
<td>Carbasses, Offal &amp; Visera</td>
<td>Carbasses, Offal &amp; Visera</td>
</tr>
</tbody>
</table>

Note: all of the above banned items are also screened out at the transfer station.

<table>
<thead>
<tr>
<th>Mission</th>
<th>Hope</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minnie's Pit Landfill</strong></td>
<td><strong>Hope Landfill</strong></td>
</tr>
<tr>
<td>(604) 826-9008</td>
<td>(604) 869-9065</td>
</tr>
<tr>
<td>ONP (old newspapers) &amp; OCC (cardboard)*</td>
<td>ONP (old newspapers) &amp; OCC (cardboard)*</td>
</tr>
<tr>
<td>Mixed Paper, Magazines, Boxboard*</td>
<td>Mixed Paper, Magazines, Boxboard*</td>
</tr>
<tr>
<td>Office Paper (mixed grades)*</td>
<td>Office Paper (mixed grades)*</td>
</tr>
<tr>
<td>Cans/Metal Food Containers*</td>
<td>Cans/Metal Food Containers*</td>
</tr>
<tr>
<td>Ferrous &amp; Non-ferrous Scrap Metal*</td>
<td>Ferrous &amp; Non-ferrous Scrap Metal*</td>
</tr>
<tr>
<td>Plastics Type #1 &amp; #2*</td>
<td>Plastics Type #1 &amp; #2*</td>
</tr>
<tr>
<td>Glass (food &amp; beverage containers)*</td>
<td>Glass (food &amp; beverage containers)*</td>
</tr>
<tr>
<td>Organic/Yard Waste &amp; Clean Fill*</td>
<td>Organic/Yard Waste &amp; Clean Fill*</td>
</tr>
<tr>
<td>Batteries (Auto)*</td>
<td>Batteries (Auto)*</td>
</tr>
<tr>
<td>Waste Oil</td>
<td>Waste Oil</td>
</tr>
<tr>
<td>White Goods*</td>
<td>White Goods*</td>
</tr>
<tr>
<td>Rubber Tires*</td>
<td>Rubber Tires*</td>
</tr>
<tr>
<td>Gypsum Board*</td>
<td>Gypsum Board*</td>
</tr>
<tr>
<td>Propane Tanks*</td>
<td>Propane Tanks*</td>
</tr>
<tr>
<td>Hazardous Materials</td>
<td>Hazardous Materials</td>
</tr>
<tr>
<td>Raw Sewage &amp; Septic Sludge</td>
<td>Raw Sewage &amp; Septic Sludge</td>
</tr>
<tr>
<td>Carbasses, Offal &amp; Visera</td>
<td>Carbasses, Offal &amp; Visera</td>
</tr>
</tbody>
</table>

* Accepted for Recycling at same Landfill Site
  (Call ahead for times, applicable charges and amounts allowable)
MATERIALS PROHIBITED FROM LANDFILL

* SPECIAL WASTE AS DEFINED IN THE PROVINCIAL SPECIAL WASTE REGULATIONS;
* LIQUID WASTE (SEPTAGE);
* BIOMEDICAL WASTE;
* DISCHARGE FROM ABATTOIRS, FISH HATCHERIES, FARMING AND CANNERIES;
* PROPANE TANKS WITH VALVES IN PLACE;
* FUEL TANKS, GREASE CONTAINERS AND STEEL DRUMS UNLESS EMPTY AND CUT OPEN;
* GYPSUM WALLBOARD EXCEEDING 2% OF ANY INDIVIDUAL WASTE LOAD;
* COOKING OILS.
### Recycling Depots

These are privately owned and operated depots where a business can drop-off recyclables. Always phone ahead. Tipping fees and accepted materials change from time to time. Please use facilities located in your area.

#### Abbotsford and Surrounding Area

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Address</th>
<th>Hours</th>
<th>Accepted Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbotsford Bibles for Missions</td>
<td>854-6682</td>
<td>34150 South Fraser Way. Open M-Sat 9:30am-5pm.</td>
<td>Materials accepted: clothes hangers, clothing, glass (unbroken windows), mattresses, plastic grocery bags.</td>
<td></td>
</tr>
<tr>
<td>Abbotsford Bottle Depot</td>
<td>853-7770</td>
<td>33236 Walsh Avenue. Open M-Sat 9am-5pm, Sun 10am-4pm.</td>
<td>Materials accepted: flammable liquids, gasoline, glass, newspaper, paint, pesticides, refundable beverage containers, solvents.</td>
<td></td>
</tr>
<tr>
<td>Abbotsford/Mission Recycling Depot</td>
<td>850-3551</td>
<td>33670 Valley Rd. off Abbotsford/Mission #11 Hwy, opposite Transfer Station. Open M-Sat 8am-4:30pm.</td>
<td>Materials accepted: aluminum, tin &amp; steel cans, cardboard, glass, magazines, newspaper, office paper, oil, paint, phone books, plastics #1 &amp; #2.</td>
<td></td>
</tr>
<tr>
<td>Bent Nail New &amp; Used Building Supplies</td>
<td>850-2691</td>
<td>#6 - 2664 Gladys Avenue. Open M-Sat 8am-5:30pm (6pm on Fri).</td>
<td>Materials accepted: garage sale items, glass (unbroken windows), lumber, paint (unopened), salvage and used building materials.</td>
<td></td>
</tr>
<tr>
<td>BFI Waste Services</td>
<td>525-0281</td>
<td>5324 Thorne Ave., Burnaby. Open M-F 7am-3pm, Sat 7am-1pm.</td>
<td>Materials accepted: aluminum, aluminum cans &amp; containers, cardboard, concrete/rock/gravel, gypsum, magazines, newspaper, office paper, phone books, plastics #1 &amp; #2, tin &amp; steel cans, soil.</td>
<td></td>
</tr>
<tr>
<td>Bradner General Store</td>
<td>856-6933</td>
<td>5440 Bradner Road, Bradner. Open M-Sun 9am-5pm.</td>
<td>Materials accepted: glass (refundable beverage), plastics #1 &amp; #2, refundable beverage cans.</td>
<td></td>
</tr>
<tr>
<td>Letterlock</td>
<td>854-1242</td>
<td>#9 - 32442 Dahlstrom Avenue. Open M-F 8am-6pm, Sat 9am-1pm.</td>
<td>Materials accepted: styrofoam packing chips.</td>
<td></td>
</tr>
<tr>
<td>Store Name</td>
<td>Phone Number</td>
<td>Address</td>
<td>Days of Operation</td>
<td>Materials Accepted</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>--------------</td>
<td>----------------------------------</td>
<td>------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MCC Furniture &amp; Appliance Store</td>
<td>854-2062</td>
<td>31872 South Fraser Way, Clearbrook</td>
<td>M-Sat 9am-5pm.</td>
<td>aluminum, appliances (white goods), brass, bronze, cardboard, clothing, computer equipment, copper, furniture, garage sale items, mattresses, sports equipment, steel, zinc.</td>
</tr>
<tr>
<td>Moe's Bottle Depot</td>
<td>859-1979</td>
<td>2625 Gladys Avenue.</td>
<td>M-Sat 9am-5pm, Sun 10am-3pm.</td>
<td>glass (refundable beverage), plastics #1 &amp; #2, refundable beverage cans.</td>
</tr>
<tr>
<td>R &amp; T Recyclables</td>
<td>852-6092</td>
<td>#23 - 31550 South Fraser Hwy.</td>
<td>M-Sat 9am-5pm.</td>
<td>cash refund for most pop, beer and wine cooler containers. Materials accepted: cardboard, newspaper, office paper, phone books, plastics #1 &amp; #2, refundable containers.</td>
</tr>
<tr>
<td>Ralph's Empire Used Auto Parts</td>
<td>864-8856</td>
<td>1210 Sumas Way, RR#2.</td>
<td>M-Sat 8am-5pm.</td>
<td>car batteries, car hulks &amp; rads, cast iron, tires.</td>
</tr>
<tr>
<td>Regional Recycling</td>
<td>852-9152</td>
<td>34450 Vye Rd.</td>
<td>7 days/week, weekdays 9am-6pm, weekends 10am-5pm.</td>
<td>aluminum, steel &amp; zinc cans, auto batteries &amp; rads, bronze, brass, cardboard, computers &amp; electronics, film negatives, glass, gypsum, lead, newspaper, office paper, paint, phone books, plastics #1 &amp; #2, refundable containers, scrap metal, tires white goods, wood.</td>
</tr>
<tr>
<td>Salish Disposal Ltd.</td>
<td>864-9177</td>
<td>34321 Industrial Way.</td>
<td>M-F 7am-5pm, Sat 8am-1pm.</td>
<td>appliances (white goods), asphalt, barrels, cardboard, aluminum, brass, bronze, car hulks/batteries/rads, cast iron, concrete/rock/gravels, copper, dentistry waste, garage sale items, gypsum, hot water tanks, lead, lumber, mattresses, salvage, soil, steel, tin cans, tires, used building materials, wood pallets &amp; waste.</td>
</tr>
<tr>
<td>Salvation Army - Abbotsford</td>
<td>852-9305</td>
<td>33933 Cyril St.</td>
<td>M-F 8am-5:30pm, Sat 9am-5pm.</td>
<td>clothes hangers, clothing, furniture.</td>
</tr>
<tr>
<td>Summit Moving &amp; Storage</td>
<td>850-5977</td>
<td>2150 Paramount Cres.</td>
<td>M-F 8am-5pm.</td>
<td>cardboard.</td>
</tr>
<tr>
<td>Superior Rad &amp; Air</td>
<td>852-4522</td>
<td>#1 - 33743 King Rd.</td>
<td>M-F 8am-5pm, Sat 9am-3pm.</td>
<td>aluminum, brass, car batteries &amp; radiators, copper.</td>
</tr>
<tr>
<td>Company Name</td>
<td>Phone</td>
<td>Address</td>
<td>Hours</td>
<td>Accepted Materials</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------</td>
<td>----------------------------------------------</td>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The Answer Garden Products Ltd.</td>
<td>856-6836</td>
<td>27715 Huntingdon Rd. Open M-F 7am-5pm.</td>
<td>Materials accepted: compost, soil, wood pallets, waste &amp; brush.</td>
<td></td>
</tr>
<tr>
<td>Chilliwack and Surrounding Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ag-Gro Composting Systems Ltd.</td>
<td>793-9338</td>
<td>Parr Road. Open M-Sat 8am-5pm.</td>
<td>Materials accepted: lumber, used building materials, wood pallets, wood waste &amp; brush.</td>
<td></td>
</tr>
<tr>
<td>Chilliwack Bottle Depots Ltd.</td>
<td>792-9572</td>
<td>45934 Tretheway Ave. Open M-Sat 8:30-5pm.</td>
<td>Materials accepted: aluminum, cardboard, drink boxes/milk cartons, flammable liquids, gasoline, glass, newspaper, paint, pesticides, plastics #1 &amp; #2, refundable beverage cans, solvents, tin cans.</td>
<td></td>
</tr>
<tr>
<td>Chilliwack Recycling</td>
<td>795-3545</td>
<td>44255 Yale Rd. West. Open M-F 8am-3:30pm.</td>
<td>Materials accepted: cardboard, glass, newspaper, office paper, plastics #1 &amp; #2, refundable beverage cans, tin cans.</td>
<td></td>
</tr>
<tr>
<td>L &amp; L Traders Ltd.</td>
<td>792-6127</td>
<td>45922 Railway Ave. Open M-F 9am-4:30pm.</td>
<td>Materials accepted: aluminum, brass, bronze, car radiators, cast iron, copper, lead, salvage (not automotive), steel.</td>
<td></td>
</tr>
<tr>
<td>Letterlock</td>
<td>795-7090</td>
<td>9110-A Young Rd. South. Open M-F 8am-6pm, Sat 9am-1pm. Materials accepted: styrofoam packing chips.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mount Cheam Woodworking</td>
<td>795-9297</td>
<td>8359 Banford Rd. Open M-Sat 6am-6pm, 24 hours by appointment. Materials accepted: tree trunks/large limbs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. O. C. Services Inc.</td>
<td>792-7177</td>
<td>#2 - 9360 Mill St. Open M-F 8:30am-5pm.</td>
<td>Materials accepted: computer equipment, toner cartridges (printer/copier).</td>
<td></td>
</tr>
<tr>
<td>Pacific Greenhouse Services Ltd.</td>
<td>793-0787</td>
<td>9580 Armstrong Rd. Open M-Sat 6am-10pm.</td>
<td>Materials accepted: compost, hydroponic equipment, soil, wood pallets.</td>
<td></td>
</tr>
<tr>
<td>Riteway Auto Wreckers</td>
<td>792-0781</td>
<td>43701 Industrial Way. M-F 8am-5pm, Sat 9am-4pm. Materials accepted: aluminum, brass, bronze, car batteries/hulks/rads, cast iron, copper, steel, tires.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roadstar Truck &amp; Auto Parts</td>
<td>858-3341</td>
<td>4777 Cultus Lake Rd. Open M-F 8:30am-5pm.</td>
<td>Materials accepted: car batteries/hulks/rads.</td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>Phone</td>
<td>Address</td>
<td>Hours</td>
<td>Accepted Materials</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------</td>
<td>----------------------------------------------</td>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rosedale Grocery &amp; Video</td>
<td>794-7614</td>
<td>51296 Yale Rd., Rosedale. Open M-Sat 7am-9pm, Sun 7am-9pm.</td>
<td>Materials accepted: glass, refundable beverage cans, plastic #1 &amp; #2.</td>
<td></td>
</tr>
<tr>
<td>Salvation Army - Chilliwack</td>
<td>792-0001</td>
<td>45746 Yale Rd. Open M-F 8:30am-4:30pm, Sat 9:30am-4pm.</td>
<td>Materials accepted: clothing, computer equipment, furniture, garage sale items, sports equipment.</td>
<td></td>
</tr>
<tr>
<td><strong>Hope</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R &amp; R Recycling</td>
<td>869-3328</td>
<td>930B - 6th Avenue. Open M-F 8am-5pm, Sat 10am-2pm.</td>
<td>Materials accepted: barrels, brass, car batteries/oil filters, cardboard, clothing, copper, drink boxes/milk cartons, glass, magazines, newspaper, office paper, paint, phone books, plastics #1 &amp; #2, refundable beverage cans, steel, tin cans, wood waste &amp; brush.</td>
<td></td>
</tr>
<tr>
<td><strong>Kent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Recovery Shop</td>
<td>796-3653</td>
<td>1701 #9 Highway, Aggasiz. Open M-Sat 9am-5pm.</td>
<td>Materials accepted: glass, paint, plastics #1 &amp; #2, refundable beverage cans.</td>
<td></td>
</tr>
<tr>
<td><strong>Mission and Surrounding Area</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antrim Battery Company</td>
<td>820-3362</td>
<td>29643 Lougheed Highway. Open M-Sun 8am-8pm.</td>
<td>Materials accepted: car batteries.</td>
<td></td>
</tr>
<tr>
<td>Bridge Bottle Depot</td>
<td>820-1830</td>
<td>1 - 7034 Bridge St. Open M-F 10am-4:30pm, Sat 9:30am-5pm.</td>
<td>Materials accepted: glass, plastics #1 &amp; #2, refundable beverage cans.</td>
<td></td>
</tr>
<tr>
<td>Stave Falls Autowrecking Ltd.</td>
<td>462-7000</td>
<td>29989 Dewdney Trunk Rd. Open M-F 8:30am-5pm, Sat 9am-3pm.</td>
<td>Materials accepted: car hulks.</td>
<td></td>
</tr>
<tr>
<td>Tri-City Ribbon Exchange</td>
<td>463-2409</td>
<td>20833 Stoney Ave., Maple Ridge. Open M-Sat 8:30am-5pm.</td>
<td>Materials accepted: inkjet/bubblejet/laser cartridges, toner cartridges (printer/copier).</td>
<td></td>
</tr>
</tbody>
</table>
Under the provisions of the Waste Management Act and in accordance with the Fraser Valley Regional District Solid Waste Management Plan and the Fraser Valley Regional District By-Law No. _______.

Joe Hauler

hereinafter referred to as the LICENSEE is authorized to transport SOLID WASTE and RECYCLABLE MATERIALS within the Fraser Valley Regional District

This WASTE HAULING LICENSE has been issued under the terms and conditions, including definitions, prescribed in Fraser Valley Regional District By-Law No. _______ hereinafter referred to as the BYLAW for discharge sources and works existing or planned on ________, 19_

1.0 TRANSPORT

1.1 Transport

1.2 Transport Area

1.3 Authorized Disposal Sites

2.0 VEHICLES

2.1 Vehicle List

The vehicles to which this license applies are listed below.

VEHICLE# LICENSE# MAKE/MODEL CONFIGURATION CAPACITY (tonnes & m3)
3.0 INSPECTIONS

3.1 FVRD Inspections

3.2 Load Inspections

4.0 FEES

4.1 License Fees

[In this section a fee structure will be defined per vehicle]

5.0 TERMS

5.1 Compliance Date

5.2 Penalties
THE FRASER VALLEY REGIONAL DISTRICT
SOLID WASTE DEPARTMENT

DRAFT
WASTE STREAM MANAGEMENT LICENSE
TRANSFER STATION

Under the provisions of the Waste Management Act in accordance with the Fraser Valley Regional District Solid Waste Management Plan and the Fraser Valley Regional District By-Law No._____

Joe Transfer Station

hereinafter referred as the LICENSEE is authorized to operate a TRANSFER STATION and to RECOVER RECYCLABLE MATERIAL at a site located at __________, __________, B.C.

This WASTE STREAM MANAGEMENT LICENSE has been issued under the terms and conditions, including definitions, prescribed in Fraser Valley Regional District By-Law No.____ hereinafter referred to as the BYLAW for discharge sources and works existing or planned on __________.

Issued __________, 19__
Waste Stream Management License # TL--

Fraser Valley Regional District
1.0 SITE

1.1 Location of Authorized facility(ies)

1.2 Access

1.3 Site Requirements

2.0 OPERATING REQUIREMENTS

2.1 Type of Facility

2.2 Hours of Operation

2.3 Site Supervision

2.4 Acceptable Material

2.5 Recyclable Materials

2.6 Storage Quantity (site specific)

2.7 Public Health Safety and Nuisance

2.8 Litter Control

2.9 Area Maintenance

2.10 Hazardous Materials

2.11 Drainage
2.12 Load Inspection
2.13 Supply of Receipt
2.14 Works
2.15 Licensed Haulers
2.16 CFC Recovery
2.17 Plan of Operation
2.18 Scavenging
2.19 Unacceptable Material
2.20 Burning Prohibited
2.21 Fire Protection
2.22 Emergency Procedures
3.0 INSPECTIONS
3.1 Inspections
4.0 REPORTING
4.1 Record Keeping/Reporting
5.0 FEES

5.1 License Fee

6.0 TERMS

6.1 Existing Operation

6.2 Compliance Date

7.0 SECURITY and PERFORMANCE

[This section shall require that provision is made for the future financial security at and beyond closure by establishing a Closure Fund in a form acceptable to the Manager, such as an up front deposit. The terms under which the fund is controlled must be clearly outlined. The ultimate amount of the financial security must meet or exceed the estimated closure and post-closure costs plus a reasonable contingency for any remediation which may be required.]
THE FRASER VALLEY REGIONAL DISTRICT
SOLID WASTE DEPARTMENT

DRAFT
RECYCLER LICENSE

Under the provisions of the Waste Management Act and in accordance with the Fraser Valley Regional District Solid Waste Management Plan and the Fraser Valley Regional District By-Law No. ___.

Joe Recycler

hereinafter referred to as the LICENSEE is authorized to receive RECYCLABLE MATERIAL and to OPERATE A RECYCLING FACILITY at a site located at __________, __________ B.C.

This WASTE STREAM MANAGEMENT LICENSE has been issued under the terms and conditions, including definitions, prescribed in the Fraser Valley Regional District By-Law No. ___ hereinafter referred to as the BYLAW for discharge sources and works existing or planned on __________, ___.
1.0 SITE

1.1 Location

1.2 Access

1.3 Site Requirements

2.0 OPERATING REQUIREMENTS

2.1 Type of Facility

2.2 Hours of Operation

2.3 Site Supervision

2.4 Acceptable Materials

2.5 Storage Quality

2.6 Contaminated Material

2.7 Nuisance

2.8 Windblown Debris

2.9 Area Maintenance

2.10 Hazardous Materials

2.11 Drainage
2.12 Load Inspection
2.13 Supply of Receipt
2.14 Licensed Haulers
2.15 CFC Recovery
2.16 Plan of Operation
2.17 Scavenging

3.0 INSPECTIONS
3.1 Inspections

4.0 REPORTING
4.1 Recording and Reporting

5.0 FEES
5.1 License Fee

6.0 TERMS
6.1 Existing Operation
6.2 Compliance Date
Under the provisions of the Waste Management Act in accordance with the Fraser Valley Regional District Solid Waste Management Plan and the Fraser Valley Regional District By-Law No.,

Joe Landfill

hereinafter referred as the LICENSEE is authorized to discharge SOLID WASTE TO THE LAND and to RECOVER RECYCLABLE MATERIAL at a site located at , B.C.

This WASTE STREAM MANAGEMENT LICENSE has been issued under the terms and conditions, including definitions, prescribed in Fraser Valley Regional District By-Law No., hereinafter referred to as the BYLAW for discharge sources and works existing or planned on .

NOTE: This licence will not be in conflict with the Operational Certificate.
All landfills in the Fraser Valley Regional District shall be operated, closed and monitored in accordance with the June, 1993 Ministry of Environment, Lands and Parks (MELP) document "Landfill Criteria for Municipal Solid Waste" or MELP-approved exemptions.

1.0 SITE

1.1 Location of Authorized facility(ies)

1.2 Access

2.0 OPERATING REQUIREMENTS

2.1 Type of Facility

2.2 Hours of Operation

2.3 Site Supervision

2.4 Acceptable Material

2.5 Recyclable Materials

2.6 Litter Control

2.7 Hazardous Materials

2.8 Drainage

2.9 Load Inspection

2.10 Works
2.11 Licensed Haulers

2.12 Plan of Operation

2.13 Fire Protection

2.14 Emergency Procedures

2.15 Process Modifications

3.0 INSPECTIONS

3.1 Inspections

4.0 REPORTING

4.1 Reporting

4.2 Scale Tickets

4.3 Record Keeping

5.0 FEES

5.1 Administration Fee

5.2 Application Fee

5.3 License Fee
6.0 TERMS

6.1 Existing Operation

6.2 Compliance Date

7.0 SECURITY and PERFORMANCE

7.1 Security
PLAN MONITORING ADVISORY COMMITTEE 
TERMS OF REFERENCE

COMMITTEE ROLE
The primary role of the Plan Monitoring Advisory Committee (PMAC) is to advise the Regional Board to effect and ensure the efficient and successful implementation of the Fraser Valley Regional District (FVRD) Solid Waste Management Plan.

COMMITTEE REPRESENTATION
The general committee membership is as follows: Manager of Community Services; the Ass’t Manager, Environmental Services and the Environmental Services Co-ordinator of the FVRD; one technical staff member from each member municipality; one technical representative from First Nations; one Ministry of Environment representative; one member from the private composting sector; one member representing the Waste Haulers Association; two representatives from environmental and community groups; one resident of the FVRD; one representative from a Recycling Society.

SCOPE
The PMAC oversees and/or reviews all business related to the Plan and makes recommendations to the Executive Committee. All recommendations made by the various working groups must have approval by the PMAC prior to that recommendation being passed through to the Executive Committee. The bulk of the work is carried out by Regional District staff or consultants, or in the case of municipalities, municipal staff. This committee serves to review work and provide input.

OBJECTIVES AND TASKS
1) To meet on a quarterly (or as required) basis to discuss issues relating to Plan monitoring.
2) To review all information related to implementation of the Plan, including waste quantities, populations, diversion rates for each Plan component.
3) To act in an advisory role during each major Plan review, which will occur every five years.
4) To act as a mediator in any disputes arising during implementation of the Plan that pertain to:
   * an administrative decision made by FVRD in the issuance of a license,
   * interpretation of a statement or provision in the Plan, or
   * any other matter not related to a proposed change to the actual wording of the Plan or an operational certificate.
5) To assist the Regional District in public consultation matters affecting the public, such as landfill siting, transfer station siting, etc.
6) To support municipal waste management staff recommendations to their respective councils when requested and if applicable (Plan dependent)

CONDUCT OF MEETINGS
A Chair will be elected by the committee members. The meetings will be carried out on a quarterly or as-needed basis, in a manner determined by the Chair. In general, the committee is to operate on a consensus basis. The Chair will have discretion as to when consensus is reached. Consensus will be formally recorded in the minutes of the meeting. In certain circumstances, issues raised during the course of a meeting may require a formal motion and vote.

Agreement among committee members shall be sought whenever an agenda item is advanced as a specific recommendation to the Executive Committee. Consensus will be sought by the Chair as to whether a given issue is a voting matter.
IMPLEMENTATION WORKING GROUP
TERMS OF REFERENCE

WORKING GROUP ROLE
The primary role of this informal Implementation Working Group is to provide municipal input to manage, primarily, the implementation of major recycling and residual management programs, both from the municipalities and the Regional District, in order to ensure the efficient and successful implementation of this region’s Solid Waste Management Plan (“the Plan”). This group would provide municipal input and technical expertise as a support to the Plan Monitoring Advisory Committee (PMAC).

WORKING GROUP REPRESENTATION
The membership of this working group will primarily be the Regional District and Municipal technical representatives. This representation will be at the discretion of the PMAC however; and may vary from time to time depending upon the nature of the projects.

SCOPE
This group will focus primarily on infrastructure related initiatives and programs that effect the management of recyclables and residuals within the municipalities and Regional District. The bulk of the work would be carried out by Regional District staff or consultants, or in the case of municipalities, municipal staff. This working group would serve to review work and provide input.

OBJECTIVES AND TASKS
1) To recommend strategies to increase diversion rates where the target diversion rates are not being achieved.
2) To conduct an annual review and recommend updates, if necessary, of the following Plan components:
   * effectiveness of can limits and bag tag costs
   * lists of banned materials and materials with higher tipping fees
   * the operation of any tendered contracts
3) To review any operation or closure plans for waste management facilities under the Plan.
4) To assist in the design of regional and municipal solid waste management initiatives.
5) To study Solid Waste Hauler and Facility licensing.
6) Encourage the installation of recyclable drop-off facilities within parks and resorts.
7) To review and assist with SWM Plan amendments.

CONDUCT OF MEETINGS
A Chair is appointed by the PMAC committee members. The meetings will be carried out on a quarterly or as-needed basis, in a manner determined by the Chair. In general, the committee is to operate on a consensus basis. The Chair will have discretion as to when consensus is reached. Consensus will be informally recorded in the minutes of the meeting.
BYLAW ENFORCEMENT WORKING GROUP
TERMS OF REFERENCE

WORKING GROUP ROLE
The primary role of this Bylaw Enforcement Working Group is to provide expertise to manage the implementation of major bylaws both from the municipalities and the Regional District in order to ensure the efficient and successful implementation and enforcement of the Solid Waste Management Plan ("the Plan"). This group would provide technical expertise and effort as a support to the Plan Monitoring Advisory Committee (PMAC).

WORKING GROUP REPRESENTATION
The membership of this working group will primarily be the Regional District and Municipal technical representatives and bylaw officers, however, this representation will be at the discretion of the PMAC and may vary from time to time depending upon the nature of the projects.

SCOPE
To co-ordinate with municipalities in the creation and adoption of solid waste related bylaws. The bulk of the work would be carried out by Regional District staff or consultants, or in the case of municipalities, municipal staff. This working group would serve to review work and provide input.

OBJECTIVES AND TASKS
1) To develop an illegal dumping/anti-littering bylaw
2) To develop a bylaw to require larger businesses or institutions to submit waste reduction plans/
3) Review bylaws targeting waste reduction within the demolition and construction sector.
4) Assist municipalities develop bylaws requiring larger multifamily developments to include space for recyclable collection.
5) Assist in the development of bylaws regarding solid waste management throughout the Regional District and municipalities.

CONDUCT OF MEETINGS
A Chair is appointed by the PMAC committee members. The meetings will be carried out on an as-needed basis, in a manner determined by the Chair. In general, the committee is to operate on a consensus basis. The Chair will have discretion as to when consensus is reached. Consensus will be informally recorded in the minutes of the meeting.
PROMOTION AND EDUCATION WORKING GROUP
TERMS OF REFERENCE

WORKING GROUP ROLE
The primary role of this informal Promotion and Education Working Group is to assist with the implementation and dispersion of major public education programs and promotional materials produced by the Regional District. This will ensure the efficient and successful implementation of the region’s Solid Waste Management Plan. This group provides expertise and effort as a support to the Plan Monitoring Advisory Committee (PMAC). As a result of the Plan’s emphasis on educating the public, this working group was formed to take advantage of the opportunity for the Regional District and member municipalities to work together on these programs. This will reduce effort duplication and costs by sharing media campaigns and promotional materials such as brochures.

WORKING GROUP REPRESENTATION
The membership of this working group will primarily be Regional District and Municipal public educational representatives, as well as representatives from the media and recycling societies. This representation will be at the discretion of the PMAC and may vary from time to time depending upon the nature of the projects.

SCOPE
The focus of this group will be to assist the municipalities and Regional District by providing a forum in which to work together in this regard. It is the intent that this committee will be the primary team in which education and promotional efforts to reduce waste are standardized and shared. This team approach will simplify efforts that have traditionally been done unilaterally by local government. The bulk of the work would be carried out by Regional District staff or consultants, or in the case of municipalities, municipal staff. This working group would serve to review work and provide input.

OBJECTIVES AND TASKS
1) To periodically review and recommend updates, if necessary, on the effectiveness of educational and promotional material.
2) Share educational and promotional material including advertisements, brochures, newsletters, curriculum’s, signage, and posters where appropriate.
3) Wherever possible, share in desktop publishing and advertising costs.
4) Share in other promotional events such as mall displays, workshops, presentations to environmental groups and schools, etc.

CONDUCT OF MEETINGS
A Chair is appointed by the PMAC committee members. It is expected that, in time, this group will become fairly active as the advantages are realized. Therefore meetings will be carried out on an as-needed basis, in a manner determined by the Chair. In general, the committee is to operate on a consensus basis. The Chair will have discretion as to when consensus is reached. Consensus will be informally recorded in the minutes of the meeting.
FACILITY SITING WORKING GROUP
TERMS OF REFERENCE

WORKING GROUP ROLE
The primary role of this informal Facility Siting Group is to provide expertise to manage the siting of major facilities both from the municipalities and the Regional District in order to ensure compliance with the goals and provisions specified in the Solid Waste Management Plan ("the Plan") and provincial regulations. This group would provide technical expertise and effort as a support to the Plan Monitoring Advisory Committee (PMAC).

WORKING GROUP REPRESENTATION
The membership of this working group will primarily be the Regional District, BC Environment, and Municipal technical representatives, however, this representation will be at the discretion of the PMAC and may vary from time to time depending upon the nature of the projects. The group would be made up of members directly involved with the particular project at hand.

SCOPE
To provide technical input into the siting of major waste management facilities such as central composting operations, major transfer stations, landfills, and material recycling facilities. This group would not be involved with smaller facilities such as recyclable drop-off depots or residual bin depots unless specifically directed by the PMAC. The bulk of the work would be carried out by Regional District staff or consultants, or in the case of municipalities, municipal staff. This working group would serve to review work and provide input.

OBJECTIVES AND TASKS
1) Provide Regional District and local technical input into siting projects.
2) Ensure compliance with the goals of the Plan.

CONDUCT OF MEETINGS
A Chair is appointed by the PMAC committee members. The meetings will be carried out on a quarterly or as-needed basis, in a manner determined by the Chair. In general, the committee is to operate on a consensus basis. The Chair will have discretion as to when consensus is reached. Consensus will be informally recorded in the minutes of the meeting.
<table>
<thead>
<tr>
<th>Item</th>
<th>PROGRAMS</th>
<th>Capital 1997</th>
<th>Staff/Onte 1997</th>
<th>Person Hours 1997</th>
<th>Staff Time Cost</th>
<th>Program Cost 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Education and promotional Material for public and private sectors (e.g., bi-annual newsletter)</td>
<td>$3,250</td>
<td>staff</td>
<td>50</td>
<td>$2,250</td>
<td>$5,500</td>
</tr>
<tr>
<td>2</td>
<td>Information package about backyard composting</td>
<td>$3,250</td>
<td>onsite</td>
<td>8 wks</td>
<td>$800</td>
<td>$4,050</td>
</tr>
<tr>
<td>3</td>
<td>Information package about materials/products and how to recycle</td>
<td>$3,250</td>
<td>onsite</td>
<td>8 wks</td>
<td>$800</td>
<td>$4,050</td>
</tr>
<tr>
<td>4</td>
<td>Complete system audit at-a-glance facility/products/etc... - large brochure</td>
<td>$2,250</td>
<td>onsite</td>
<td>13 wks</td>
<td>$1,300</td>
<td>$3,550</td>
</tr>
<tr>
<td>5</td>
<td>Promotion of both regional and private recycling &amp; composting programs</td>
<td>$2,250</td>
<td>onsite</td>
<td>13 wks</td>
<td>$1,300</td>
<td>$3,550</td>
</tr>
<tr>
<td>6</td>
<td>Information on prov/fed. sponsored or instigated programs</td>
<td>$1,375</td>
<td>onsite</td>
<td>10 wks</td>
<td>$1,000</td>
<td>$2,375</td>
</tr>
<tr>
<td>7</td>
<td>Information on bear management will be distributed</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>8</td>
<td>Tours of waste management facilities will be distributed</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>9</td>
<td>Prepare a list of speakers on solid waste subjects</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>10</td>
<td>Work with local school districts, institutions, business, etc. to promote and encourage 3Rs</td>
<td>staff</td>
<td>250</td>
<td></td>
<td>$11,350</td>
<td>$11,350</td>
</tr>
<tr>
<td>11</td>
<td>Work with local interest groups to promote 3Rs philosophy</td>
<td>staff</td>
<td>250</td>
<td></td>
<td>$11,350</td>
<td>$11,350</td>
</tr>
<tr>
<td>12</td>
<td>Encourage/assist senior government to implementing current and new 3Rs programs</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>13</td>
<td>Review waste management operations and encourage facilities to divert material to existing or new markets</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>14</td>
<td>Standardize bag limits where the curb side collection of recyclables is available and assist agencies in implementing 'tag a bag' cost recovery systems - across the FVRD</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>15</td>
<td>Would assist municipalities in developing more detailed user pay systems across the RD</td>
<td>staff</td>
<td>70</td>
<td></td>
<td>$3,175</td>
<td>$3,175</td>
</tr>
<tr>
<td>16</td>
<td>Look for more opportunities to promote backyard composting through cooperative ventures with the private sector.</td>
<td>staff</td>
<td>140</td>
<td></td>
<td>$6,350</td>
<td>$6,350</td>
</tr>
<tr>
<td>17</td>
<td>Shall establish a program for in-house reduction and reuse programs for all FVRD offices and facilities. These formalized programs would be generic enough to assist municipalities on similar initiatives</td>
<td>staff</td>
<td>70</td>
<td></td>
<td>$3,175</td>
<td>$3,175</td>
</tr>
<tr>
<td>18</td>
<td>Will provide assistance to private industry to encourage improvements to the solid waste system</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>19</td>
<td>Will encourage and assist in private sector materials and waste exchanges</td>
<td>$3,100</td>
<td></td>
<td></td>
<td></td>
<td>$3,100</td>
</tr>
<tr>
<td>20</td>
<td>RCBC Waste Exchange</td>
<td>$3,100</td>
<td></td>
<td></td>
<td></td>
<td>$3,100</td>
</tr>
<tr>
<td>21</td>
<td>Shall establish an in-house procurement program for recycled content products for all FVRD offices and facilities. These formalized programs would be generic enough to assist municipalities on similar initiatives</td>
<td>staff</td>
<td>32</td>
<td></td>
<td>$2,360</td>
<td>$2,360</td>
</tr>
<tr>
<td>22</td>
<td>Partnerships will be fostered with private industry in the operation of recycling programs.</td>
<td>staff</td>
<td>70</td>
<td></td>
<td>$3,175</td>
<td>$3,175</td>
</tr>
<tr>
<td>23</td>
<td>The RD will continually review new and existing recycling markets and, if feasible, encourage private and municipal programs to utilize them.</td>
<td>staff</td>
<td>70</td>
<td></td>
<td>$3,175</td>
<td>$3,175</td>
</tr>
<tr>
<td>24</td>
<td>Recycling programs will be initiated or enhanced within the electoral area.</td>
<td>staff</td>
<td>35</td>
<td></td>
<td>$1,600</td>
<td>$1,600</td>
</tr>
<tr>
<td>25</td>
<td>Recyclable drop-off facilities will be encouraged within parks and resorts.</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
</tbody>
</table>
## Solid Waste Management Plan Program Summary and Estimated Costs

**COMPOSTING**

| 26 | Will develop an in-house procurement program for compost for any facilities where compost can be used. This document would be available to all municipalities to encourage their participation. | $33,000 | staff | 100 | $4,500 | $37,500 |

| 27 | Will review existing backyard bin technology to find the most suitable bin for public use. The FVRD will coordinate with all municipalities to distribute bins and add to provincial subsidies, to make the purchase more attractive to the public. | $0 | $0 | $0 | $0 |

**BYLAWS**

| 28 | Develop an illegal dumping / anti-littering bylaw covering electoral areas across the FVRD and assist municipalities in similar endeavours. | $0 | staff | 70 | $3,200 | $3,200 |

| 29 | Develop a bylaw to require larger businesses or institutions to submit waste reduction plans to the FVRD on a five year basis | $0 | $0 | $0 | $0 |

| 30 | Review current Municipal and Waste Management Act powers to prepare bylaws targeting waste reduction within the demolition and construction sector. | $0 | $0 | $0 | $0 |

| 31 | Coordinate the development of municipal and FVRD bylaws to require businesses to participate in regional and external composting programs. | $0 | $0 | $0 | $0 |

| 32 | The RD will assist municipalities in developing a bylaw requiring larger multi-family developments to include space for recyclable collection. | $0 | $0 | $0 | $0 |

**OTHER DUTIES (QUANTIFIED)**

| 33 | Will coordinate all quarterly Plan Monitoring Advisory Committee and Subcommittee meetings. | staff | 96 | $4,350 | $4,350 |

| 34 | All plan amendments and reports to the PMAC will be drafted by the regional district staff for review. | staff | 48 | $2,175 | $2,175 |

| 35 | Develop a waste audit format suitable for the annual reporting of waste quantities as required by BC Environment. | staff | 50 | $2,275 | $2,275 |

| 36 | Collect municipal and private waste audits and compile the information into the annual reporting format to present to BC Environment. | staff | 35 | $1,600 | $1,600 |

| 37 | Will prepare annual implementation reports to compare Planning commitments to actual programs implementation. | $0 | $0 | $0 | $0 |

| 38 | Formally review the Plan | $0 | $0 | $0 | $0 |

| 39 | Miscellaneous (contingency, public consultation, workshop time) | staff | 400 | $18,000 | $18,000 |

| 40 | Administration support to all functions | $31,509 | staff | $31,509 | $31,509 |

**OTHER (UNQUANTIFIED)**

| 41 | Periodic reviews of all waste management systems included in the Plan to identify achievements and recommend improvements as required. | $0 | $0 | $0 | $0 |

| 42 | Work with municipalities to adjust composting operations as-needed. | $0 | $0 | $0 | $0 |

| 43 | Seek partnerships with other regional districts if advantages can be gained in the processing and transport of recyclables and compostables. | $0 | $0 | $0 | $0 |

<p>| 44 | If req'd, the FVRD will consider the issuance of waste management licenses. | $0 | $0 | $0 | $0 |</p>
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Staff</th>
<th>Cost</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>Annually review the success of materials bans to determine effectiveness.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Work with the Province and Industry to promote and assist with Stewardship</td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>programs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Will support the Province in developing a responsible system for treating</td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>biomedical waste.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Will coordinate meetings between stakeholders in the DLC sector.</td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>50</td>
<td>Contingency for unquantified</td>
<td>$2,000</td>
<td>staff</td>
<td>$4,500</td>
</tr>
<tr>
<td></td>
<td>TOTALS</td>
<td>$85,234</td>
<td>1956</td>
<td>$93,760</td>
</tr>
</tbody>
</table>

Notes:
- Onsite employee through Ministry of Employment and Investment will cost $100/wk (numbers used in table include staff support to coordinate and train)
- Staff time is charged at a general average rate of $38 per hour
- This sheet acts as a backup to Regional District budget
- * indicates that program is needed as discussed in plan but is not clearly specified on a particular page