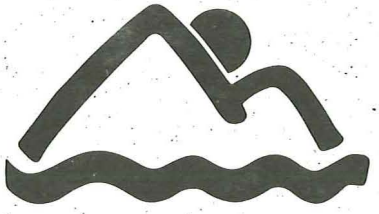
BC Environment

Analysis of 3Rs Programs in British Columbia Regions Outside the Greater Vancouver Regional District

– Summary Report –



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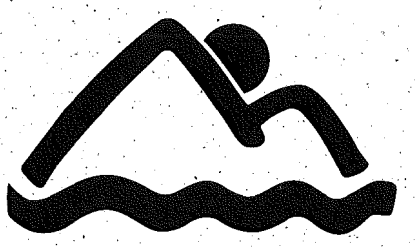

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Analysis of 3Rs Programs in British Columbia Regions Outside the Greater Vancouver Regional District

– Summary Report –

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Prepared for:
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Ministry of Environment, Lands and Parks
Province of British Columbia

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Foreward

The Municipal Waste Reduction Branch of the Ministry of Environment, Lands and Parks is charged with the implementation of the Municipal Solid Waste Management Strategy of the Provincial Government. The Branch coordinates the various efforts of government, the public, industry and business as they work together toward the provincial goal of a 50 percent reduction in per capita generation of municipal solid waste by the year 2000.

One of the most important elements of the Strategy is the municipal solid waste management plans being prepared by regional districts. Many of the initiatives undertaken by the Branch are intended to provide assistance and guidance to regional districts in their planning efforts.

The *Guide to the Preparation of Regional Solid Waste Management Plans by Regional Districts* stresses the importance of determining the major options available and/or practical at the regional level for managing the components of the municipal solid waste stream. This is critical when dealing with the 3R's of reduce, reuse and recycle.

This report is an assessment and analysis of 3R's waste management initiatives, programs and strategies for areas of the province outside the GVRD. The Ministry expects that the results of this effort will assist regional districts in the preparation and implementation of their municipal solid waste management plans and will provide valuable data in the development and/or modification of provincial municipal solid waste reduction policies and programs.

Due to the importance of this province-wide evaluation, the Ministry wished to ensure the results would be accurate, relevant and credible to all stakeholders. To assist the contractor in achieving this objective, the Ministry established a Provincial Review Committee (PRC). The PRC, composed of representatives from regional districts, environmental non-profit societies and the private sector, worked with the contractor to provide a "reality check" on information gathered and analyzed. The PRC's summary and recommendations follow.

On behalf of the Ministry, I wish to thank the PRC members for their valuable contributions in making the *Analysis of 3R Programs in British Columbia Regions Outside the GVRD* the comprehensive effort that it is.

The following is a summary version of the full report which is available by contacting the Ministry of Environment, Lands and Parks in Victoria.

R.J. Driedger, P.Eng.
Director, Municipal Waste Reduction

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SECTION A

Foreword from the Provincial Review Committee

The *Analysis of 3R Programs in B.C. Regions Outside the GVRD* is a significant document. Information collected and analyzed in the *Analysis* represents the first detailed evaluation to date of 3R programs, systems, and legislation in place in B.C.

Cooperation has been a key ingredient in the successful completion of this report. Sponsored by the B.C. Ministry of Environment, data used in the *Analysis* depended on the cooperation of local government, non government organizations, and the private sector. The Provincial Review Committee (PRC), appointed by the Provincial Government to ensure the information contained in the Report is valid and practical for stakeholders affected, was part of this cooperative effort.

The PRC was a group of individuals with working level experience and practical knowledge in waste reduction, reuse, and recycling. The Committee's membership reflected both B.C.'s diverse geographical areas and the wide range of public, private and non-profit groups involved in 3R programs and solid waste management.

The Analysis of 3R Programs in B.C. Regions Outside the GVRD is intended to assist Regional Districts in their preparation of solid waste management plans. The project was also designed to help the Provincial Government develop 3R programs and policies responsive to the needs of local government. The PRC joined the project after its design and methodology were in place and met three times to review draft materials, the Interim Report, and Final Report. The PRC was charged with ensuring the *Analysis's* results are as credible and relevant and as accurate as possible. However, as emphasized by the authors, the accuracy of the data contained in the *Analysis* is limited by the quantity and quality of information provided by regional districts and outside jurisdictions.

The PRC has reviewed the Final Report in detail. The Committee supports the *Analysis's* findings and conclusions and believes it will prove valuable in the following areas:

- As a planning document for regional districts commencing or already engaged in a Solid Waste Management Plan or Plan Review.
- As a rough tool for assessing the costs and diversion potential of 3R initiatives
- As a way of establishing "bench mark" data on waste generation and diversion in B.C.

The PRC agrees with the *Analysis's* four conclusions. We recognize the need to improve the quality of information on waste management and the 3Rs; this report is the first step. We also acknowledge the obstacles to be overcome if the Province is to achieve its goal of a 50 per cent reduction in generation of solid waste by the Year 2000. As stated in the *Analysis*, reaching the 50 per cent goal will depend on continued cooperation between government, private sector and non-profit organizations and changing our practices and attitudes towards waste and waste management. This *Analysis* demonstrates the need to change and provides an up-to-date summary of the options available.

Recommendations from the Provincial Review Committee following Completion of the Analysis of 3R Programs in British Columba Regions Outside the GVRD

Submitted to: The Ministry of Environment, Lands, and Parks - Municipal Waste Reduction Branch

Based on its involvement in the recent project analyzing 3Rs programs in B.C. regions outside the GVRD, the Provincial Review Committee drafted the following recommendations to the Province. These recommendations reflect the need for follow-up on issues raised in the Final Report, concerns about the review committee process, and the need to emphasize the role Product Stewardship must play in waste disposal and 3Rs program.

The PRC recommends that the Province:

1. Establish standards for collecting and reporting data related to solid waste generation and disposal and the results of 3Rs programs. Furthermore that the Province assist regional districts with developing standardized waste and 3Rs program tracking systems and also work with other provinces and the federal government to establish standard definitions for terms such as reduction, recycling, diversion etc.
2. Define the process for consultation groups such as the PRC to ensure participants are involved in setting the terms of reference of the particular study as well as reviewing the results.
3. Make Product Stewardship a priority in its waste reduction policies and initiatives and spearhead efforts to establish Product Stewardship on a national level. The PRC has defined Product Stewardship as making the producers and consumers of products and not the taxpayer responsible for the life cycle costs of those products. Product Stewardship goals would include reducing waste at source, developing markets for waste materials, funding of waste management programs and pollution prevention.
4. Create a consultation process similar to the PRC to regularly review the results of the Province's 3Rs initiatives, regional district 3Rs programs, and progress towards reaching the 50 per cent goal in reducing solid waste by the Year 2000. This consultation process could take the form of annual workshops following publication of the MOELP's Municipal Waste Tracking Report.
5. Respond to these recommendations and draft an implementation plan.

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SECTION C

1

Introduction

A. Background

In accordance with provincial guidelines, the Greater Vancouver Regional District (GVRD) is conducting an evaluation of solid waste management options as part of its Waste Management Plan Review process. The Ministry of Environment, Lands and Parks recognizes that many aspects of the Plan Review have implications throughout the province. As a result, Peat Marwick Stevenson & Kellogg, jointly with CH2M Hill and Resource Integration Systems, were contracted to analyze 3Rs (Reduce, Reuse, Recycle) programs operating in all regions of British Columbia outside the GVRD. A map of the regional districts is provided in Appendix A.

This report is expected to provide relevant information to assist the non-GVRD regional districts in the preparation of their solid waste management plans. It will also be instructive to the GVRD (especially in terms of estimating supply and demand for recyclable materials). It will further help the Ministry of Environment, Lands and Parks to develop 3Rs programs that complement and support the efforts of the regional districts.

B. Purpose and objectives

The purpose of this project was to describe and analyze 3Rs programs, systems and legislation affecting municipal, provincial and federal bodies in regions of British Columbia outside the GVRD. This includes assessing the costs and effectiveness of current and proposed initiatives and making projections about waste generation and waste minimization. The specific objectives were to assess:

- Current 3Rs programs in the province outside the GVRD.
- Current and proposed legislation relevant to 3Rs activities outside the GVRD.
- Current educational and promotional programs in the province outside the GVRD.
- 3Rs experience in other jurisdictions across Canada and elsewhere.
- The impact on the waste stream from impending 3Rs programs in the province outside the GVRD.

C. Methodology

We used a variety of approaches to obtain information for this project. These included the following:

- **Written surveys**

  We distributed written questionnaires to each of the 28 regional districts in the province outside the GVRD plan area (3Rs programs for the GVRD are documented in a separate study). We received responses from 17 regional districts (a 60% response rate).

- **Literature reviews**

  To supplement the information from the above-mentioned questionnaires, we reviewed the solid waste management plans prepared by eight of the regional districts. We also reviewed other relevant documents prepared by different levels of governments and non-profit organizations.

- **Data searches**

  We used the provincial waste tracking system to compile various numerical data about the municipal and regional district 3Rs programs. We also used information on regional districts and recyclable processing firms from the provincial recycling hotline database. We further used some unit statistics included in the GVRD waste flow and recycling audit and the technical memoranda for the GVRD Stage II Solid Waste Management Plan.

- **Telephone interviews**

  We conducted telephone interviews with a number of individuals knowledgeable about 3Rs programs in the non-GVRD regional districts. These individuals included municipal, regional, provincial and federal government staff, employees of private sector recycling firms, and members of non-profit organizations (e.g., Recycling Council of British Columbia).

To ensure that the information presented in this report was as accurate as possible and met the needs of relevant stakeholders, the Ministry established a Provincial Review Committee (PRC), consisting of individuals with working level expertise and experience in waste reduction, reuse and recycling. The purpose of the committee was to guide the development of the project and to review draft materials. The members of this committee are listed in Appendix B.

D. Data limitations

Many regional districts and their member municipalities in the non-GVRD region have only recently begun to compile data on their 3Rs activities. As a result, some of the numerical data, particularly in Chapter 3, represent best educated guesses as opposed to hard facts. Further, some of the cost estimates and waste minimization impacts in other jurisdictions are based on anecdotal information from secondary sources. For these reasons, this report provides an indication of general directions and trends as opposed to highly accurate figures.

As a general rule, the waste generation information is most accurate; information on recycling is of moderate accuracy; and reduction and reuse information is least accurate. Further, the accuracy of information for particular regional districts is highest for those districts that responded to the written survey, or provided waste management plans (see Appendix D). Finally, information is generally more accurate for urban areas than for rural areas. However, information in this report is sufficiently accurate to be a useful planning tool for the Regional Districts in preparing their solid waste management plans, and for the provincial government in developing 3Rs programs to support these districts.

SECTION D

II

Executive Summary

A. Introduction

The Greater Vancouver Regional District (GVRD) is conducting an evaluation of solid waste management options as part of its waste management plan review process. Because the GVRD is the largest regional district in the province in terms of population, many aspects of the plan have implications throughout the province. As a result, Peat Marwick Stevenson & Kellogg, jointly with CH2M Hill Engineering Ltd. and Resource Integration Systems, were contacted to analyze 3Rs (reduction, reuse, recycling) programs operating in the British Columbia regional districts outside the GVRD. The report will assist the non-GVRD regional districts as they prepare their solid waste management plans. It will also help the Ministry of Environment, Lands and Parks to develop 3Rs programs that complement and support the efforts of the regional districts.

B. Existing reduction, reuse and recycling

In 1992, the non-GVRD regions of British Columbia generated an estimated 1.23 million tonnes of municipal solid waste (MSW) from both residential, and industrial, commercial and institution (IC&I) sources. Combined with the GVRD, about 2.73 million tonnes were generated in the province. The amount of waste generated has increased 14% from 1989 levels, which is largely due to a 12% increase in population over the same period. Residents in non-GVRD regions generated an average 750 kg of waste per person in 1992, compared with 865 kg per person in the GVRD.

About two-thirds of the non-GVRD regional districts in British Columbia sponsored at least one program to encourage waste reduction or reuse. The most common waste reduction program was backyard composting. Reduction and reuse programs were targeted at fairly general audiences, rather than clearly defined segments, such as IC&I generators. Some programs were targeted at children through school programs.

About 119,000 tonnes were recovered for recycling from the non-GVRD regions in 1992. This is just over 32% of the 360,000 tonnes recovered for recycling in the GVRD. Looking at the province as a whole, the provincial recycling rate has increased 280% (from 170,000 tonnes to 480,000 tonnes) since 1989. About 73 kg of wastes were recovered for recycling per person in the non-GVRD regions in 1992, compared with

209 kg per person in the GVRD. The provincial recycling rate was therefore 18%, which compares with 10% for the non-GVRD regions and 24% in the GVRD. However, including reduction and reuse, the non-GVRD regions achieved at least a 12% waste minimization impact.

Since the beginning of 1989, the provincial government has provided over $5.5 million in funding assistance to non-GVRD regions for 3Rs programs. A similar amount of money was provided to the GVRD (which had a slightly higher population than the non-GVRD regions). Just over half of the provincial government's funding to the non-GVRD regions was used to support reduction and reuse programs, while the remainder was allocated to recycling activities.

The 28 districts in the non-GVRD region are at different stages in their solid waste management planning processes and none have completed their plan. Three districts are completing revisions to their Stage III plans (Capital Regional District, Columbia-Shuswap-Regional District and East Kootenay Regional District). Nine districts are working on or have completed their Stage II plans, while 16 districts are at Stage I of the planning process.

The regional districts in the non-GVRD regions had a number of suggestions on how the provincial government could help them achieve their waste management goals. Specifically, they recommended that the provincial government: provide assistance in implementing waste reduction education programs; enact stricter regulations on packaging content and/or disposal options; encourage market demand for recycled materials; impose tougher penalties for illegal dumping and other waste management infractions; provide financial incentives to municipalities; enact recycled content legislation; and provide a province-wide system for collecting, handling and disposing of household hazardous wastes.

C. Reduction and reuse program options

We have identified a number of waste reduction and reuse program options, which are grouped into five major decision-making categories. These options are discussed briefly under each decision-making category on the following sub-sections.

1. Education, training and communication

Because many waste reduction and reuse initiatives rely primarily on behaviour change, a well-designed communication and promotional program is very important in achieving waste reduction goals. Such communication programs could include a "*Participaction*-style" campaign to change peoples' values and beliefs about waste and waste minimization. These could be supported by education and more detailed technical assistance programs to foster waste reduction and reuse among local businesses, institutions and community groups.

Employee training programs can be effective in encouraging waste reduction and reuse. Further, product labelling can be an effective tool to allow customers to make informed choices about the waste impacts of their purchases. A waste exchange information service to match people with reusable waste/materials to those that need them can also help to foster waste minimization.

To increase the effectiveness of the above education and communication programs, it is important to have objective, supporting information on waste reduction and reuse impacts. Formal data tracking on 3Rs activities can significantly help to improve the effectiveness of 3Rs programs. The provincial government has implemented a solid waste tracking system to assist in this regard.

2. Funding and economic incentives

One important way to provide an economic incentive for waste reduction is to implement a user-pay waste collection program. This involves charging waste generators for waste collection in direct proportion to the amount of waste they generate. When appropriately designed, they have proven to be effective in encouraging waste generators to reduce the amount of solid waste they generate.

Deposit/refund programs also provide economic incentives to reduce and reuse. These programs involve placing an extra charge on the purchase price of a potentially polluting product and refunding that charge when the item is returned after use. A variety of financial incentives can also be used to encourage companies to reduce and reuse wastes. Typical incentives include grants and awards, soft loans, tax exempt bonds, flow-through tax credits, and tax deductions or rebates.

Green taxes or product charges can further provide incentives for waste reduction and reuse. The province has implemented green levies on three materials: used tires, lead-acid batteries, and disposable diapers. An alternative to product charges are disposal charges. Charging a fee to dispose of wastes at a disposal facility has proven to provide strong incentives to reduce and reuse wastes. A variation on disposal charges are disposal surcharges, which involve applying an incremental disposal fee at the landfill for garbage for which no attempt has been made to separate out reusable materials. Finally, the removal of existing subsidies on virgin materials can encourage people to use resources more sparingly.

3. Policies and legislation

A number of Canadian and United States jurisdictions have introduced legislated disposal bans to divert certain types of waste from disposal. Product bans can also be introduced, however, they are most commonly associated with hazardous materials or products containing ozone-depleting substances.

In terms of policies, standards can be developed for products or packaging that encourage waste reduction or reuse. Similarly, government purchasing departments could develop procurement policies focused on waste reduction and reuse.

Perhaps the most comprehensive legislative tool to reduce waste is the manufacturer's responsibility program. Under this program, manufacturers would be made responsible, by law, for managing products throughout their whole life cycle. While existing programs typically require manufacturers to take back their products at the end of their useful life for recycling, these requirements could also be applied to source reduction and reuse.

4. Planning and management

The National Packaging Protocol is a prime example of a planning and management tool for waste reduction. A multi-stakeholder national packaging task force is attempting to achieve a 50% reduction in packaging waste across Canada by the year 2000 from 1988 levels. Another planning approach would be to require waste generators to complete waste audits and develop waste reduction plans for their operations. Such efforts could motivate generators to take actions that avoid the creation of waste at their source. Finally, research and planning could be conducted on life cycle assessment in support of manufacturer's responsibility programs. Life cycle assessment involves analyzing the waste impacts of a product through its design, manufacturing, use and disposal.

5. Infrastructure development

At the individual household level, an important form of infrastructure development could include providing backyard composters for householders to compost their own waste on-site. While this measure is relatively simple, it can have a dramatic effect on reducing total wastes disposed. At a broader level, infrastructure development could be improved by establishing or promoting reuse/repair centres. Finally, a regional or provincial waste reduction authority could be put in place to coordinate waste reduction and reuse activities.

Possibly the most significant unintended consequence of introducing reduction and reuse programs is an increase in illegal dumping or burning. Specific reduction and reuse programs that have the potential to result in illegal dumping/burning include: user-pay waste collection, landfill tipping fees, disposal surcharges, and disposal bans.

D. Residential recycling program options

Recyclable materials from rural, single-family households are typically taken to dropoff depots. These depots are generally conveniently located and most are staffed. Unstaffed depots are highly incompatible with user-pay collection programs. Recovery rates are generally about 50-80 kg per household per year.

In urban areas, single-family homes can be provided with convenient curbside collection. Recyclables are generally set out at the curb in boxes or bags and 5-10 material types are accepted. These programs generally recover about 140 kg per household per year. Multi-

family dwellings are typically provided with the same curbside collection as single-family households or rely on a central bin system. Collection rates from multi-family households are generally similar or slightly lower than for single-family curbside collection programs.

One variation of curbside collection programs are "wet/dry" systems in which householders separate their wastes into two or three distinct streams: one for wet/organic materials that can be composted, and the others for dry recyclables and/or dry wastes. The only wet/dry collection programs in British Columbia operate in Gold River and Hope (a pilot program is also being conducted in the Capital Regional District). Some municipalities have reduced their collection costs by collecting both garbage and recyclables simultaneously using the same vehicle. This reduces the number of different collection vehicles needed, as well as the labour to do separate runs to do these two groups of materials. Other communities have reduced their costs simply by reducing the frequency of collection.

To enhance recycling levels, municipalities can establish a bylaw that requires residents to participate in recycling programs, and to enforce the bylaw with fines or suspension of regular garbage collection. Another residential recycling enhancement strategy is to ensure that all multi-family dwellings are designed in a manner that facilitates recycling.

E. IC&I recycling program options

In contrast to residential recycling, the majority of IC&I collection is conducted through commercial haulers on a user-pay basis. As a result, the method of collection is generally determined on a company-by-company basis between the organization and the hauler. A number of reduction and reuse program options, discussed above, also foster IC&I recycling. These include: training programs, green taxes or charges, disposal bans, product bans, product standards, procurement policies, and the National Packaging Protocol. Specific programs that target recycling in the IC&I sector are discussed below.

The two major IC&I recycling program options relate to the manufacturer's responsibility program and mandatory waste audit/reduction plans. Manufacturer's responsibility programs ensure that the cost of recycling post-consumer products and packages is paid for by producers and consumers, as opposed to the general taxpayer. Mandatory waste audits/reduction plans require IC&I establishments that are significant waste generators to analyze their wastes and develop recycling plans.

Another IC&I recycling program option could be to require IC&I establishments to separate out for recycling, a range of designated materials for which there is sufficient market demand. A similar requirement could be made for IC&I generators to separate out organic wastes for composting.

As with multi-family dwellings discussed in previous sections, all new IC&I establishments could be required to make provisions in the building design for recycling. Finally, the provincial government could establish a standard litter control container that would facilitate the separation and recycling of wastes.

F. Recyclable materials processing options

As indicated earlier, about 119,000 tonnes of materials are recovered for recycling in the non-GVRD regions of the province. The facility most commonly involved in the first stage of recyclable materials processing after collection is called a Materials Recovery Facility (MRF). This is an intermediate processing facility in which recyclables are cleaned, sorted and baled before further processing. Most regional districts have at least one MRF. There is a concentration of MRFs in the southern part of Vancouver Island. MRFs generally operate on a single eight-hour shift and are operated in a fairly equal mix between government, private sector, and non-profit organizations.

The combined processing capacity of these MRFs is estimated to be about 300,000 tonnes per year. At current recycling rates, they are therefore operating at about 40% capacity. Processing facilities within the region range in size from 5 to 50 tonnes per day. Just over 50% of the materials handled by the non-GVRD MRFs are exported out of the region to the GVRD or out-of-province markets. About 45% of total recyclables recovered in the non-GVRD region are fully remanufactured in the region.

G. Market development options

Market development options refer to public policy measures that stimulate the demand for secondary materials. These options ensure that materials that are recovered for recycling can find buyers who are willing to remanufacture them into new products with recycled content. In this section, we summarize a number of key market development options of relevance to British Columbians.

Minimum content requirements can be instituted to require manufacturers to achieve a minimum level of recycled content in specific products or materials. Typically, minimum content laws are phased in over time to allow manufacturers to adapt their products and processes. A variation on this option is to require manufacturers, distributors, and retailers to use a specified amount of secondary materials within a certain time period (which may or may not be incorporated into the product). This variation is called a minimum utilization requirement and is more flexible than a minimum content requirement.

Tradeable credits can be issued by government to firms that have achieved certain levels of performance that exceed the minimum content requirements or minimum utilization requirements. This encourages companies to go beyond the requirements of those market development options.

Product stewardship, discussed earlier under manufacturer's responsibility, can serve as a market development option by requiring manufacturers to take responsibility for the full loop recycling of their products. Government procurement, also discussed under reduction and reuse, can increase demand for recyclable materials by favouring products with recycled content.

Another market development option is for government agencies to provide tax credits or tax exemptions related to reuse and recycling. Similarly, grants and loans can be offered to organizations involved in reuse or recyclables processing activities.

Market development zones can be established in which a geographic area is designated for recycling companies to locate together. This option allows these firms to share infrastructure and services, use common sources of feedstocks, and establish a specialized base of industry for the region. Alternatively, instead of locating together, a system could be established to collaborate on the marketing of secondary materials. In theory, cooperative marketing should allow firms to obtain better prices (because of larger volumes), transport the materials more efficiently, or find markets for a broader range of materials. Finally, virgin material taxes could be introduced to raise the cost of virgin materials, thereby making recycled materials more cost-competitive.

H. Impact on waste stream from impending programs

Impending waste management programs in the regional districts are anticipated to increase non-GVRD waste minimization from 12% to 20%. This increase will come primarily from reduction and reuse programs as well as IC&I recycling. While this is only a moderate improvement over current rates, it should be noted that the regional districts are not required to submit their final solid waste management plans to the provincial government until 1995. We expect that, because of this reporting requirement and the enforcement power of the provincial government to withhold waste permits for non-complying districts, a substantial number of new 3Rs programs will be launched in the next few years.

Waste minimization programs that will likely be most cost-effective include: user-pay waste collection; procurement policies; waste audit/reduction plans; manufacturer's responsibility; National Packaging Protocol; backyard composting; curbside collection; and the mandatory separation requirement.

I. Conclusions

British Columbians in the regional districts outside the GVRD have a long way to go to achieve the provincial government's 50% waste reduction goal by the year 2000. While many of the districts have launched new 3Rs programs in the last two or three years, only a handful have made substantial progress. Nonetheless, sufficient time exists for the districts to get on track. This will take dedicated attention and effort, as well as continued support from the provincial government, but it is not an impossible task. It is also a very worthwhile task, given the benefits it will provide to the quality of our environment.

SECTION E

XIII

Conclusions

A. A distant goal

One only has to take a cursory look at the figures to see that British Columbians in the regional districts outside the GVRD have a long way to go to achieve the provincial government's 50% waste reduction goal by the year 2000. While many of the districts have launched 3Rs programs in the last two or three years, only a handful have made the degree of progress necessary to achieve success.

When we look at the 12% waste minimization rate for the region, we might feel that, three years into the 50% waste reduction program, we are only slightly behind target. However, considering that the initial waste minimization is generally the easiest to obtain, we are considerably further behind.

Nonetheless, sufficient time still exists for the districts to get back on track. This will take dedicated attention and effort, as well as continued support from the provincial government. Nonetheless, it is a worthwhile task, given the benefits it will provide to the quality of our environment.

B. Improving the quality of our information

One of the most important tools to improving the cost-effectiveness of 3Rs programs, is the availability of detailed, accurate waste management and 3Rs information. Only once we determine where we are now can we determine where we need to go in the future. While this report provides some baseline statistics, many data gaps still exist. It is therefore important for the districts to maintain detailed records of the costs and waste minimization impacts of their 3Rs programs. While this will involve some additional short-term effort, in the longer term, it should allow the districts to achieve greater levels of waste minimization for lower costs. Further, waste management and 3Rs information should be standardized as much as possible among the districts so that they can compare the relative success of their programs. The Provincial Waste Tracking system is a positive step in this direction.

C. Establishing partnerships

Achieving the 50% reduction goal will require a coordinated effort by government agencies, private sector firms, and non-profit organizations. This coordination will ensure that each group understands its respective roles so that programs are not duplicated or forgotten. Coordination can also improve the effectiveness of individual programs through information sharing, joint promotional efforts, and standardized policies and legislation. In particular, the provincial government can play an important role in coordinating the efforts of the regional districts and by establishing 3Rs programs that would most effectively be implemented at the provincial level (e.g., manufacturer's responsibility programs).

D. Changing values and beliefs

Possibly the most important determinant of success in achieving the provincial 50% waste reduction goal is the values and beliefs that people hold with respect to waste. If people become more aware of the economic, environmental and social consequences of the wastes they generate; if they can be persuaded to make lifestyle changes that will avoid creating wastes; if their personal value systems reinforce the notion that generating wastes is fundamentally wrong; this will do more to achieve success than any other single initiative.

While people place a high value on a clean environment, they also place a high value on convenience, which can often result in increased waste. Products and packaging that are targeted for waste reduction serve many functions, such as sanitation, theft prevention, public safety and customer appeal. Further, our consumer orientation makes it difficult for people to see that the least wasteful consumer choice is often not to buy at all. Until we can convince people that a "standard of having" does not equal a standard of living and that resource efficiency is far more sensible than waste management, we will continue to manage the symptoms instead of addressing the causes.

SECTION F

Appendix B

BC Solid Waste Provincial Review Committee

Appendix B

BC Solid Waste Provincial Review Committee

Name	Organization	Phone/Fax
Regional Districts		
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