The Manitoba Product Stewardship Program: A Comparative Review and Assessment

By:

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A practicum submitted to the Faculty of Graduate Studies
in partial fulfillment of the requirements
for the degree of

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List of Abbreviations

CCME	Canadian Council of Ministers of the Environment
CIPSI	Canadian Industry Packaging Stewardship Initiative
CPE	Committee on Packaging and the Environment
DSD	Duales System Deutschland
EPR	Extended Producer Responsibility
EU	European Union
FPE	Foundation for Packaging and the Environment
ICI	Industrial, Commercial & Institutional
MMSB	Multi Material Stewardship Board
MPSC	Manitoba Product Stewardship Corporation
MPSP	Manitoba Product Stewardship Program
MSW	Municipal Solid Waste
NAFTA	North American Free Trade Agreement
NAPP	National Packaging Protocol
OECD	Organization for Economic Cooperation and Development
PR	Producer Responsibility
PRO	Producer Responsibility Organization
PUB	Public Utilities Board
SPR	Shared Producer Responsibility
STAR	Student Action on Recycling
WRAP	Waste Reduction and Prevention
WTE	Waste-to-Energy

Abstract

Packaging Stewardship is an elusive term that defies a static definition. In a broad sense, it suggests that responsibility be taken by industry, in whole or in part, for the waste resulting from its products. Shared responsibility is touted in Canada as an important principle of stewardship, which allows all those who benefit from packaging to play a role in its management. The Manitoba Product Stewardship Program (MPSP) is a stewardship initiative intended to instill a degree of responsibility among product distributors within the Province of Manitoba. The purpose of this research was to comparatively review, and assess the state of stewardship in Manitoba, and specifically determine the strengths and weaknesses of the MPSP. A stakeholder survey and literature review was performed as a means of achieving the following objectives: to define the concept of packaging stewardship; to document the evolution of the MPSP; to outline the program's strengths and weaknesses; to establish the effective components of other stewardship programs; and to make recommendations regarding the future development of the MPSP.

Packaging stewardship has been slow to evolve in Canada. The lack of a national and unified approach to packaging waste has left provincial governments to determine the appropriate paths for their waste reduction efforts. Across Canada, this has resulted in differing approaches to packaging waste, ranging from simple municipal recycling programs to more comprehensive deposit-refund schemes, landfill bans, and mandated refillable beverage containers. Stewardship initiatives in Canada have tended to rely on cooperative approaches involving partnerships between industry and government, typified by the National Packaging Protocol (NAPP). The NAPP has had little real impact in Canada, due to the lack

of powers at the federal level to impose necessary standards on the provinces. However, it has promoted stewardship objectives among government and industry. This is in contrast to European countries, which have tended to rely on a legislated approach to promote responsible behaviour on behalf of industry. The European Union Directive on Packaging and Packaging Waste has been a catalyst to spur member states and industry to action within Europe, obligating countries to achieve specific and mandatory waste reduction targets.

The MPSP is an important beginning in the development of stewardship initiatives in Canada. The MPSP is unique among the provincial programs in using container levies on product distributors to fund multi-material recycling. The data collected revealed that the MPSP has managed to provide stable funding for recycling services serving 90% of Manitobans, increased the diversion of waste from landfills, and promoted new methods, partnerships, and opportunities for managing waste. This has been achieved while operating in isolation of other provinces.

Apart from these achievements, the study findings indicate that more action is required to broaden the base of the MPSP, and to ensure the principles of stewardship become familiar throughout Manitoba. Many problems persist, or have developed, after more than four years of operation. These include: lack of levy redistribution; minimal role for consumers; little emphasis on reduction and re-use alternatives; no performance targets; true cost accounting not yet in place; little evidence of packaging reductions; and the apparent unwillingness of industry to fully grasp program objectives and goals in the current climate of non-obligated responsibility. These problems are not insurmountable, and the negative effects can be minimized or alleviated altogether through cooperation and commitment on

behalf of government, the Manitoba Product Stewardship Corporation (MPSC), and industry.

The successes of packaging stewardship initiatives in Europe demonstrate the effective role industry can play in reducing waste. This achievement reveals the need for necessary incentives to persuade industry to optimise their packaging. Recommendations are offered to both the MPSC and the Manitoba government to encourage the further growth and development of the stewardship initiative along these lines. Of these, the broadening of the current levy schedule to include other packaging and paper materials, and the increased involvement of both consumers and industry in the stewardship process in Manitoba, are two of the more important aspects which need to evolve as first steps toward improving Manitoba's packaging stewardship efforts.

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Introduction

1.1 Background

According to Alexander (1993) there are three ways to look at garbage: 1) as simply waste, 2) as something which must be examined as serving a useful and important initial purpose, and 3) as a recoverable resource. All of these may be considered appropriate "faces" or definitions, as each one has a degree of merit. However, not all garbage is created equal, and some types of waste are considered more valuable than others, and can be recycled, recovered, or re-used. There will, however, always be a certain unwanted component of this waste which must be managed and disposed of (Alexander, 1993).

Municipal solid waste (MSW) is generally all of the garbage that is collected and put in a landfill, or a comparable facility, and includes residential, light industrial, commercial, and non-hazardous institutional waste (Environment Canada, 1991). Historically, MSW has been generally easy to manage, and has simply been landfilled. There are materials, however, in this MSW that are considerably easier and more economic to recycle and re-use than others, and these are being diverted from the nation's landfills at an increasing rate (Environment Canada, 1991). Communities across North America seem to be acknowledging the third "face" of garbage as professed by Alexander (1993), seeing it as a recoverable resource. Attempts are being made to recover some value from garbage, or at least preventing some valuable resources from being buried in a landfill forever.

While recognizing that some garbage is a recoverable resource, only a fairly recent trend in North America, it must be remembered that the management of solid waste has always had the same paramount objective: to promote public health (EPIC, 1992). At least as early as 1895, it was also recognized that there may be potential solutions when dealing with seemingly huge amounts of garbage as the Commissioner of Street Cleaning in New York City declared: "While the question of disposal of a city's waste is full of difficulty, it is also full of promise" (Hoy & Robinson, 1979). Apart from virgin materials shortages during the world wars, there has not been due consideration of the aspect of resource conservation, as lifestyles emphasized high levels of personal consumption of goods, and increased levels of per capita waste being generated (Fenton, 1994 - 1). In general the goal of society has not been to recover or re-use waste material, although these latter issues are now considered as relatively important and necessary by a growing number of people across Canada and the world (Environment Canada, 1996; Young & Sachs, 1994; Statistics Canada, 1994).

The current focus of waste disposal in much of the world is the landfill, where fully eighty to ninety percent of Canada's MSW is deposited (EPIC, 1992). This is largely the result of our view of garbage as simply waste with no other purpose. It is a cheap method of disposal that does not allow for the serious consideration of the material as a valuable resource (Jackson and Wallace, 1993). Obviously, some materials have been routinely recycled in the past as well as the present, including copper and other valuable metals. Aluminum is another metal which has been recycled on a wide scale, and is the most valuable material in curbside recycling programs, typically generating ten to twenty times more revenue per tonne than other recyclables (Menzies, 1997; Crittenden, 1997).

However, expanding this waste recovery concept towards some other materials has proved to be very difficult and controversial (Sinclair & Kuluk, 1994).

While much of the attention of waste management focuses on the aspect of the NIMBY syndrome, and even moreso on dwindling landfill space (EPIC, 1992; Selke, 1990), some feel this latter element of the debate is a fallacy. There is an argument that an abundance of landfill space still exists, and that it is a misconception to believe otherwise (Poore, 1993). As well, some have argued that our moniker as a "throwaway society" is a myth due to the fact that our garbage does not actually contain any real amounts of dwindling natural resources (Poore, 1993). In fact, it is believed that affordability and efficiency in the collection and management of garbage has taken a back seat to recycling which has become part of the current waste management scheme due only to political interference and misguided environmentalism (Poore, 1993).

Both Poore (1993), and Alexander (1993) contend that recycling cannot take the place of disposal facilities, and explain as their reasoning the relative abundance of most of the materials that are collected. For instance, the resources needed to make glass, steel and other metals, plastic, and paper are not dwindling in their availability as some have professed, according to Alexander (1993). Landfilling requires much less taxpayers funding than recycling and similar programs (Poore, 1993). In an era of fiscal restraint pervasive in Canadian government and subsequent service reductions, it may not be politically expedient to publicly fund recycling programs unless their is some financial return.

The longest running recycling program in Canada, Ontario's blue box program, has diverted only as much as 4 % of Ontario's MSW, as Ontarians total

waste generation increased nearly 25 % over the same period (Environment Canada, 1991). While the amount of waste reduced by the blue box in metropolitan Toronto was between 7% and 9% of the total waste stream by 1991 (Fenton, 1993), and it appears that this has not greatly improved in more recent times (Crittenden, 1997). Overall waste diversion rates, attributable to recycling programs, in Winnipeg are similar to those in Toronto. It appears that recycling programs in Ontario and Manitoba are effective at diverting some amount of materials from the landfill. However, in order to contribute to the national goal of achieving a 50% reduction in waste by the year 2000, other measures will need to be taken. Many contend that recycling efforts to date have had a limited impact on overall waste amounts, apart from newsprint, which makes up the bulk of the weight of materials collected (Coffey & Hartzmann, 1994). Nonetheless, municipal recycling has provided other benefits in terms of helping to divert waste materials from the conventional waste management regimes, and raising awareness of waste issues amongst the public (Environment Canada, 1996). Around the world, new initiatives are moving beyond simple recycling.

Urban waste management in its simplest form consists of collecting, processing (including incineration), treating and depositing waste into a landfill, but the emerging concept of stewardship goes well beyond this theme. There seems to be no concise or static definition of this term, however, it has been widely used in various circles to describe management schemes for packaging waste. Stewardship in its simplest form suggests only that one look after the waste produced in a sensible and effective manner. This may involve such things as life-cycle analysis of the respective material. Countries in the OECD have aimed at making the private sector more responsible for their products and their waste through Extended Producer Responsibility (EPR). Through EPR, manufacturers

and distributors of consumer goods are assigned responsibility for the proper management of a product at the post-consumer stage (OECD, 1996).

Around the world, different stewardship initiatives have been developed as a means of prescribing responsibility to industry for the wastes they produce. There has traditionally been a fragmentation of responsibilities among the different actors in the waste stream. Industry has produced materials, senior governments have been responsible for broad environmental protection goals, and local governments have taken responsibility for the waste created (Fenton & Sinclair, 1996 – 1). Product and packaging stewardship initiatives are a means of reassigning these responsibilities. These programs can be extremely varied in their approach to collecting materials, as are the materials covered by the respective programs. Stewardship in Europe is very advanced compared to the rest of the world, and has been an important element in helping to reduce waste, and increase diversion rates from landfills and other final treatments (Environment Canada, 1996). Different stewardship initiatives are being developed globally to address the unique goals and policy objectives in these respective jurisdictions.

The program developed in Manitoba to offer recycling funding, and stewardship initiatives is the Manitoba Product Stewardship Program (MPSP). The program is based on the principle of "distributor responsibility", which is suggested in provincial legislation, in the Waste Reduction and Prevention (WRAP) Act (Manitoba Product Stewardship Corporation, 1996). The MPSP is operated by the Manitoba Product Stewardship Corporation (MPSC), an independent board set up by the Manitoba government. Through the MPSC, municipalities and other local governments are eligible for funding for up to 80% of the net costs of their local or regional recycling operations. Certain materials

are designated for eligible funding by the MPSC, and these are collected at the local level to fulfill obligations for the reimbursement of costs. The program began with the development of an interim board to oversee its operations in March of 1995, and is now operating under a second three-year business plan. Approximately 90% of Manitobans now have recycling opportunities available to them. Program funding is provided by a static levy applied to all distributors of non-refillable beverage containers sold in the province.

It has been difficult to interpret the overall effect that the MPSP has had on the provincial waste stream, as any potential reductions in waste generated through recycling may have been offset by an increase in overall MSW. The MPSP is intended to be a stewardship program, through the application of some responsibility on behalf of distributors of products in this province. The MPSC and government have proposed to move beyond those levies currently applied to beverage product distributors, as well as proposing other modifications to the current program. In this light, the Manitoba government has recently consulted with numerous stakeholders in order to gain a better understanding of the impacts of the MPSP on waste management in the province, and assess the effectiveness of the program. It is unclear what action may be taken at this time, as the government has not yet announced the results of the consultation process.

1.2 Problem Statement

The different packaging stewardship initiatives being cultivated worldwide are mainly in the developmental stages, or have only been in operation for a limited time. The Duales System Deutschland (DSD), in Germany, is the oldest

such program and has only been fully operational since January of 1993. In this relatively short time frame some notable problems have arisen surrounding certain facets of these different initiatives which must be addressed in order for other jurisdictions to learn from the shortcomings of these programs. Other countries, or regions within countries, such as Manitoba, have developed, or are developing, product stewardship programs, such as the MPSP. It is vital that newer programs learn from the stewardship programs already in place, in order to develop effective means of coordination amongst the public, industry, government, and retailers, which will foster success. Learning from any perceived mistakes or achievements in other jurisdictions will be crucial to the ongoing success of the MPSP.

One of the important elements of stewardship programs, in which there appears to be a great deal of debate, is program funding. It is a struggle to determine whether it should be industry, government (through tax dollars), or consumers who are responsible. As mentioned previously, stewardship does suggest industry should take responsibility for the materials it produces. The types and amounts of materials to be covered by a stewardship program is also controversial, as is the collection method for retrieving these materials from the consumers.

Manitoba's MPSP has a clearly defined board in the MPSC, and a mandate from the government to oversee the program. The infrastructure of the program has been developed, but important facets of the program still have yet to unfold as proposed in the two business plan's produced to date. Any changes to the initiative will likely require input by industry, government, and consumer groups, as well as the general public. The opportunity is at hand for shaping an effective and

appropriate stewardship program for Manitoba, and clearly the time for input is now.

1.3 Purpose

This research will address the strengths and weaknesses of the Manitoba Product Stewardship Program as it has evolved in the context of other packaging stewardship programs. The ultimate goal is to provide valuable research and recommendations which may play a role with the further construction, and function of the MPSP in Manitoba. It is hoped that solutions can be offered to correct any aspects of the MPSP, which may be perceived as negative.

1.4 Research Objectives

The following research objectives have been identified for this study:

Objective one

- To define the concept of packaging stewardship, with specific reference to waste management practices in Canada and Manitoba;

Objective two

- To document the evolution of the MPSP in Manitoba;

Objective three

- To outline the main strengths and weaknesses in the Manitoba MPSP;

Objective four

- To establish the efficacy of certain components of different stewardship initiatives, or other waste management schemes from selected industrialized countries, that may help to address MPSP deficiencies, and;

Objective five

- To make recommendations regarding the future development of MPSP, indicating how future components of this initiative may be developed more effectively and efficiently.

1.5 Research Approach

An initial examination of the stewardship issue was carried out. The examination was intended as a means to help clarify the purpose and objectives of the research. This was accomplished through a general discussion with stakeholders involved directly or indirectly with the MPSP, and an initial and cursory study of some of the available documents and published literature on the topic. Literature on local and international stewardship programs, and waste management issues, were identified. Based on this initial review of the issue, it was deemed necessary to take advantage of numerous techniques and methods, beginning with a thorough review of the available literature on stewardship.

1.5.1 Literature Review

The literature review included accessing various and eclectic sources of information including: business and industry group documents and annual reports; conference proceedings papers; government statute, regulation, and policy documents; non-government organization reports and newsletters; OECD documents; MPSP and MPSC annual reports and business plans; and media accounts. The literature generally provided a good understanding of the stewardship programs operating internationally. This was especially true of the programs in Germany, the Netherlands, and other European countries through a large amount of thoroughly researched information which was published by the OECD, among others. Germany has operated a national stewardship program longer than any other nation in the world, and so the country's program is the focus of much attention and research. This country, therefore, provided much information regarding basic stewardship program goals and principles, including the many German achievements. Less, but equally effective, information was found on available or developing programs in the United States and Japan.

In Canada, programs appear to be less developed than in Europe. With the relative infancy of stewardship initiatives in this country, there was a lack of documentation and information on specific achievements at the provincial level attributable to stewardship. There is information on waste management practices, and recycling programs, and this is thought to reflect the existence of provincial measures, which have historically emphasized recycling and waste diversion activities. This gap of information identified during the literature review, covering both national and local issues, lead to the need of an informal survey of stakeholders. This non-structured survey helped to bring more clarity to the issue

through a discussion with professionals and other individuals involved in the Manitoba or Canadian packaging stewardship movements. Officials with the Manitoba government, City of Winnipeg, University of Manitoba, Resource Conservation Manitoba, and others were interviewed to gain knowledge of the issue. Emerging from these interviews was the observation that a more structured survey was needed to enhance the research and compliment the literature.

1.5.2 Stakeholder Survey

The structured, stakeholder survey stemmed from the literature review and the informal discussions with stakeholders. Assistance regarding the formal goals of the survey and the survey format, was provided by numerous individuals, including: government; industry; and non-governmental organizations. Pilot questions were formed and amended as required through a process of testing which took place on a number of individuals not targetted for the actual survey. Questions were designed to be open-ended to allow respondents the opportunity to be as brief or as detailed on a given question as they wished. The survey was designed to avoid any bias for or against a certain position or statement, and to avoid leading individuals to a certain conclusion or response. Attention was paid to using specific, simple, and understandable terms, and expressions, in order to minimize the opportunity for confusion or misunderstanding. Integral to the success of the survey was the clear instruction to each individual respondent that all information given would be confidential. This was done to ensure that all respondents would be as forthcoming as possible with their answers. The sample survey can be found in Appendix I.

Due to the identified lack of information at the local level, the survey's intended goal was to understand stewardship in Manitoba. By accessing numerous stakeholders in the province, much information would be realized by a well-crafted survey. Potential survey candidates were identified from a list of the attendees at two local conferences looking into the issues of waste management and stewardship: Breaking the Barriers 1998; and the WRAP Strategy '98 Workshop, both held in Winnipeg.

Regarding the survey candidates, all efforts were made to survey a good cross section of participants representing the various fields of interest and expertise. Given the relatively small number of people familiar with, or involved locally in the MPSP, it was realized that the sample size would be relatively small. Therefore, only 25 individuals were contacted to participate. These 25 were selected from amongst the potential candidates who, for the purposes of the survey, had been divided into sectors depending on their background, or the organization or company they represented. From the list of potential participants, a concerted effort was made to identify and secure for the survey, representatives from all of the various interests and backgrounds present on the Manitoba scene. This process involved selecting individuals from industry, government (including municipalities), consumer groups, MPSC, and non-profit and recycling groups. A concerted effort was also made to locate individuals from all regions of Manitoba. Table 1 identifies the sectors from which these individuals were chosen, and the number of which participated in the survey out of the respective sectors:

Table 1

Survey Participants

SECTOR	*Individuals Contacted*	*Individuals Participating*
Industry, Stewards	7	0
Government	8	5
Non-Profits, Recyclers	7	5
Consumer Groups	1	1
MPSC	1	1
Other	1	1
Total	**25**	13

Once the selection of candidates was finalized, telephone calls were made to each individual, and the purpose of the research, the goals of the survey, and the need for their participation was explained. Of the 25 people contacted, 13 took part in the survey. Survey forms were completed over the telephone. The time necessary to complete the survey on average was approximately 15 minutes. In one instance, a survey participant was faxed the survey form and returned it the following day. Those individuals or organizations declining the survey, identified various reasons for doing so, including: lack of time, lack of interest, or lack of knowledge of stewardship. Important to note is the complete lack of participation on behalf of those individuals representing industry. This group included beverage companies, product distributors, packagers, and retailers operating in Manitoba. Numerous telephone messages to representatives from these groups went unreturned, while others flatly declined the offer to participate in the survey. All

were made aware of the goals of the research and the survey, and the anonymous nature of any responses or information provided. All reasonable attempts were made to encourage the industry sector to participate, including offering to provide more information by mail or fax, or a personal meeting, but this was unsuccessful. Having said this, one individual representing a Manitoba retailer did return a telephone message more than three weeks after being contacted, asking for more survey information. This, however, was too late for them to be included in the process. Two individuals representing industry openly questioned the intentions of the research, and appeared hostile to any requests for assistance or participation on their part, due to what they perceived as "negative implications for their business interests". All other sectors were well represented in the survey, and no difficulties arose in securing their participation. A list of survey participants is available in Appendix II.

Survey results were tabulated and summarized. Frequency of the responses were calculated for each question. These results are available in Appendix III.

1.5.3 Summary of Methodology

The employment of many data sources was crucial in order to complete the research, and collect enough information. Questions arising out of one facet of the research, often led to the requirement for further analysis of the data, and the need for a complementary approach using numerous collection methods. The initial scoping exercise identified the need for both informal and structured survey's, in order to complement the literature review. Using these varied sources of information allowed for a wide-ranging analysis of the topic at hand. The analysis

of the information collected entailed a thorough review and comparison amongst different stewardship initiatives. An overall assessment of the goals and principles and effectiveness of each of these initiatives also allowed for a thorough discussion of stewardship in the Manitoba context. The evolution of, and the perceived strengths and weaknesses of, the MPSP was explored and discussed. Recommendations concerning further development of the MPSP were presented after careful and thoughtful consideration of the data. The conclusions and recommendations stemming from the analysis of this same data has fulfilled the purpose and objectives of this research.

1.6 Organization of the Practicum

The research material is organized into six chapters beginning with the introduction which provides some background information on the subjects of waste management and stewardship, while spelling out the need for the issue to be addressed.

The second chapter provides more detailed information on the topic of waste management and provides summaries on some of the current trends and practices in this field. This leads into the third chapter of the practicum which highlights the stewardship issue dealing with the evolution of the programs currently in place in Canada, and delving into an overview of programs worldwide and how they function in the context of government legislation and their mechanisms of operation.

The fourth chapter of the research entails a thorough study of the Manitoba Product Stewardship Program. This deals with the full characteristics of the program including the instruments for funding, its evolution, communication, education, management, and views of stakeholders who are either involved in the program, or a municipal partner. A summary of the survey is also presented. The fifth chapter further highlights MPSP and evaluates some of the facets of the program and employs some comparisons with other jurisdictions, in order to shed light on how effectively waste has been managed in Manitoba. Questions regarding the validity of the stewardship program are focused on as well as positive aspects of the provincial operation, and partner programs.

The sixth and final chapter of the practicum offers some conclusions and recommendations based on a synthesis of all of the information presented in the previous chapters of the research. This section of the practicum provides information on the MPSP, positive and negative, to offer potential solutions and guidance to stewardship initiatives in Manitoba. Stakeholder views are employed throughout the work in order to help validate these findings, and offer first-hand information on stewardship program details and overall effectiveness.

Chapter 2
Municipal Solid Waste Management

2.1 Solid Waste Management

There is a general pre-occupation with the belief that North Americans have become reliant on the sanitary engineer, and are throwing away more garbage, or Municipal Solid Waste, than ever. As Whitaker (1994) suggests in the following passages:

> *We are being forced to face a new definition of pollution that is not just a matter of filth but of space: We're running short of room for both ourselves and our wastes.*
> *Despite various kinds of controls, the residues of our growth and development are vast, and they continue to increase.*

In fact, there was approximately 17 % more waste by weight discarded by turn of the century American households than is discarded today (Alexander, 1993). It is true, however, that the types of waste involved are much different now than in the past. Coal ash was considered the largest component of municipal solid waste in the past, and has now been supplanted by packaging, disposable, appliances, vehicles, and other associated modern trappings. Modern heating and cooking techniques have reduced waste, as have modern refrigeration methods which has greatly reduced food spoilage and waste (Alexander, 1993). Poore (1993) contends that garbage is no longer a threat to human health in North

America as it once may have been, and that there is still abundant landfill space to contain the waste.

There are site-specific crises in dealing with solid waste management in the United States according to Alexander (1993), but there is no national crisis, even though Americans are more wasteful than any other developed nations. On the other hand, some argue that the crisis is urgent and international in scope. As Pollock (1987) states quite emphatically "*more than half the cities in the United States will exhaust their current landfills by 1990...*". In Canada it has been predicted that by the end of 1995 the existing landfills serving 71% of the total population would be full (Environment Canada, 1991). This latter prediction is likely untrue, since there is no evidence to support the notion that landfill space is dwindling across Canada. Larger, cleaner, and more efficient landfills are being built. More importantly fewer of them are needed since they are so efficient (Baarschers, 1996). However, there is still a need for finding solutions for dealing with waste other than these current conventional means.

As stated, landfills are becoming bigger and more environmentally sound, and this has reduced the number of landfills required to serve a given population. For example, in New Brunswick more than 200 dumps were recently closed and 12 new sanitary landfill facilities are being opened to serve various communities (Environment Canada, 1996). These modern sanitary landfills are safer and are monitored to ensure leachates and other contaminants are controlled. These modern landfills have also reduced the need for smaller community dumps which are typically unable to properly monitor either the waste coming into it or to detect and measure any problems such as leachate. Therefore, while landfills may be coming near the end of their life span and closing in both the United States and

Canada, it may not be a negative occurrence since new methods of waste management appear to be much more adept at handling incoming waste. This is not to say, however, that the amounts of waste we produce in this country should not be reduced simply because we have new efficient means of disposal.

Given these current and often diverging arguments surrounding waste management, it is still abundantly clear that there is a lot of waste being generated by industrialized societies. In Canada approximately thirty million tonnes of solid waste is generated every year (EPIC, 1992), and there are approximately 10,000 active and inactive land disposal sites in Canada (Environment Canada, 1991). The total amount of MSW going into landfills in Canada, as of 1990, had not yet started to decline, even though recycling depots of some type had been put in place in 70 % of Canadian municipalities (Federation of Canadian Municipalities, 1990). In fact, as of 1992 Canadians were still producing more waste than ever, and while there has also been a large increase in the number of people participating in recycling and other positive measures, this is not resulting in a decrease in the overall amount of MSW being generated (De Wiel et al, 1997).

Sparse information is available regarding the amount of wastes generated in Manitoba province-wide, however, the amounts of waste going to landfills in Winnipeg and Brandon (serving 60% of Manitoba's population) appear to have remained virtually unchanged between 1991 and 1994, near 550 thousand tonnes (Manitoba Environment, 1995). In Manitoba there are positive signs that indicate per capita waste has decreased since 1994 (Manitoba Environment, 1997), but there needs to be more action to achieve further success in reduction efforts. While Brandon's population has remained fairly static since 1991, Winnipeg has grown roughly 10 per cent over this same period of time (Statistics Canada, 1996;

Statistics Canada, 1991; Manitoba Environment, 1995). This suggests some decrease was likely in the waste generated by individual urban Manitobans between 1991 and the present. Manitoba's municipal waste production in 1990 amounted to 0.99 kg. per person per day while the national average was slightly more at 1.04 kg. per person (Statistics Canada, 1994).

Methods for dealing with MSW have ranged from landfilling to waste minimization practices, as well as composting, recovery through energy reclamation, and waste incineration. It may be that some resources which are recoverable with current technology are simply being landfilled due to lack of will, political and otherwise. It is necessary for the recycling "loop" to be closed through the development of products containing post-consumer waste, and thus reducing the amount of MSW going into landfills (Environment Canada, 1991).

2.1.1 Municipal Solid Waste Components

The components of MSW are varied and can be categorized according to product type. The six most common product types, based on North American experience, which are used are (CCME, 1992; Environment Canada, 1991):

- Packaging: shopping bags, protective and promotional wraps, beverage containers, pallets, plastic sheeting. The largest single component is paper products.
- Nondurables: newspapers, books, magazines, office and commercial and tissue paper, clothing, footwear, disposables (pens, razors).
- Yard Wastes: grass clippings, leaves, and like materials.

- Durables: appliances, furniture, rubber tires, and other manufactured products.
- Food Wastes: vegetable matter, peels, rinds, coffee grounds, etc.
- Miscellaneous: products unable to fit in other categories.

Table 2

Percentages by Weight of Product Types

Product Type	*% By Weight (approximate)*
Packaging	32%
Nondurables	28%
Yard Wastes	18%
Durables	14%
Food Wastes	8%
Miscellaneous	2%

Source: Environment Canada. 1991.

Table 3

Percentages by Weight of Material Types

Material	*% By Weight (approximate)*
Paper Products	34%
Yard Waste	20%
Plastics	9%
Food Waste	9%
Metals	8%
Glass	7%
Rubber, Leather, Textiles	5%
Wood	4%
Miscellaneous	2%

Source: Alexander. 1993.

From Table 2 and 3, one can see that the most abundant material in MSW is paper products. It would appear that by focusing attention on the recovery of the paper component of MSW, society would take great strides in reducing the amount of waste being landfilled. Paper is pervasive in our society because it is so versatile and serves numerous functions (Alexander, 1993), however, technological advancements through the computer era may justify the use of less paper in the future. Recent dramatic increases in the price of used paper products has encouraged the recycling of this commodity to expand, and this will to a large extent be sustained through changes in North American government procurement policies and consumer demand (Young, 1995).

2.1.2 Solid Waste Management Practices

The most common means of disposal for municipal solid waste is the landfilling of the material collected, accounting for somewhere on the order of 90% of the total waste stream (Pollock, 1987). While this is the most common method, one of the universal problems associated with it among industrialized countries is the siting of new facilities (Alexander, 1993). Inevitably, new sites are located near urban centres in which they serve, but they are increasingly located further from these centres as neighborhoods and communities voice their opposition to them in their backyard (Whitaker, 1994). This increases costs for waste transportation including the time consumed by disposal trucks having to travel great distances between the loading and unloading of the waste. Urban sprawl can exacerbate this potential problem. This sprawl has caused the price of land to increase in most surrounding regions adjacent to the urban area and this has increased the difficulty in locating waste facilities (De Wiel et al, 1997).

While it seems that available space may not be disappearing for landfills, it has become a necessity to move further from the areas served due to the prohibitive costs of the land available, and, as mentioned, the public opposition to landfills locating near urban areas. Some contend that the apparent dwindling of landfill space is a non-issue in North America since it would only take a square of land 114 kilometres on each side and 37 metres deep to hold the garbage of the United States for 1000 years (DeWiel et al, 1997). While this suggests nationally that there is an abundance of room for U.S. garbage, this is an inappropriate method of quantifying the amount of space considering that garbage cannot economically be transported great distances from where it is generated, and a large single hole is not the solution. Landfill siting is a local issue that is dealt with by communities who may or may not want them, but need somewhere to deposit their refuse. It is apparent that this struggle will likely continue in the future.

Waste-to-Energy (WTE) facilities have as their primary purpose the disposal of garbage (Alexander, 1993). The recovery of energy from the burning or incinerating of garbage is a secondary feature which can raise revenue for the facility through the sale of power. The first system for incinerating waste was developed in England in 1874 (Pollock, 1987), and this primitive technique slowly developed into the modern and sophisticated WTE facilities which have been built recently. In Japan these facilities are actually part of a larger community use complex, which includes heated pools and gymnasiums (Alexander, 1993). In fact the sales of the power can be many times greater than that derived from recycling or composting MSW, as Alexander (1993) found that one community in Florida received fifteen times larger revenues from WTE sales as from recycling and composting revenue from a similar tonnage of waste. This reflects the higher

market values received for energy resources as opposed to materials such as glass and aluminum.

Incinerators are much more efficient and less polluting now than was the case in the past. Prior to the 1960's and before, it was literally only the height of the stack that gave any protection to the masses below (Alexander, 1993). Most now have pollution abatement technology which can alleviate any of the past problems. Others contend, however, that the complex molecules formed from the combustion of waste are not well understood and still pose a threat to human health (Pollock, 1987). According to its promoters it is possible that given the increasing interest in WTE plants that the amount of solid waste they process in the United States could increase from three to forty per cent (Pollock, 1987). In Canada, experience has shown that incinerators and WTE facilities are as difficult to locate as are landfills, especially in densely populated regions such as the heavily industrialized Golden Horseshoe area in Southern Ontario (Environment Canada, 1991).

It is important to note the significant difference between actual incinerator's which operate as a finely tuned machine with controlled amounts of oxygen or air, and efficient scrubbers and ash precipitators to ensure that emissions mainly consist of nothing but water vapour and carbon dioxide, and those facilities that simply burn garbage (Baarschers, 1997). Unfortunately the latter still predominates the landscape around the world, and it is a true threat to human and animal health, and a poor outdated management technique for dealing with solid waste (Baarschers, 1997)

2.2 MSW Management Alternatives

2.2.1 Reduction & Reuse

While some contest that there are 4 R's pertaining to waste management (including "recovery", such as in WTE facilities recovering energy from waste), the 3 R's of waste management is more common. Reducing waste at the source, i.e. source reduction, by simply not producing it in the first place, is seen by some as the only alternative to the perceived growth in demands on landfills and other disposal techniques (Whitaker, 1994; Young, 1991). As Young (1991) states clearly: *"Source reduction...is the top choice on virtually everyone's list of waste management strategies".*

While source reduction does seem to be an attractive solution, less material purchased and consumed, and less resulting waste, it may be difficult to put in place product bans or forcibly mandate source reduction without economic upheaval. The sentiment of Alexander (1993) is that since the bulk of MSW in the United States is considered manufactured products, 70 % by weight and 86 % by volume, the source reductions for society would need to be realized in this component in order to successfully reduce waste. The landfill savings which can be attributed to less manufactured products and the resulting MSW, would also in turn cause a shrinking of the economy which could cause endless plant closures, job layoffs and other damaging effects (Alexander, 1993). However, as Alexander (1993) points out, source reduction regarding manufactured products has already been taking place through natural economic means, and a competitive market place. Nearly all products are lighter, and less material intensive today, than in 1960, while at the same time as being safer, more sophisticated and efficient

(Alexander, 1993). Manufacturers have already been practicing source reduction because it is simply good business to do so, rather than for any other broad environmental or altruistic reason. The real question remains; is this source reduction only a reduction in the growth, or in the real amount, of waste being produced? According to the critics, a reduction in the real amount of waste is needed through source reduction (Pollock, 1987; Whitaker, 1994; Young, 1991).

Reuse of products is a common theme in most, if not all, Canadian's lifestyles with reusable beer bottles, and other beverage bottles existing for many years, along with refillable pens, and razors among other examples (Environment Canada, 1991). The average beer bottle is re-used fifteen to twenty times (some as many as sixty) by the bottler before it and other rejected bottles are re-manufactured into new beer bottles and put back into the system for circulation (Fenton 1993). In fact, the recovery rate for beer bottles on average is nearly 99% of those bottles sold (for aluminum cans it is approximately 83%) (Menzies, 1997). This deposit-return system for beer has been a huge success story of re-use and efficiency for many decades. Other refillable bottles have been in use for as long as seventy years in places such as Kentucky, where the local beverage product Ale-8-One ginger ale maintains an overall rate of 70% return of its bottles (Crittenden, 1997).

Auto parts are commonly re-used through either a re-manufacturing process or through used auto parts outlets, as are clothing and other goods through distributors such as the Salvation Army. It is questionable whether these elements of reuse have had a real impact on the overall amounts of MSW, although these articles are very difficult to measure. One of the difficulties inherent in re-using manufactured products is that they can become technologically obsolete long

before their serviceable life is over, thus greatly diminishing their appeal to the current owner and potential future consumers (Alexander, 1993). In 1974, Eaton's Christmas catalogue offered the first generation of primitive quartz wrist-watches with an LED readout which listed at the time for $195.00, while this watch would probably command less than $10.00 at any store today (Eaton Company Limited, 1974). New products are continually being made, and refined and re-produced, and consumers demand innovation. Also, the higher prices of better quality manufactured products make them less desirable to many consumers, and therefore are only aimed at a small market, even though they may be much more durable and effective (Alexander, 1993).

The reuse of materials, according to Hayes (1978), however, is imperative if society is to move towards a more efficient and sustainable economy. Hayes (1978) argues that at least two-thirds of the material resources that we now waste could be reused without important lifestyle changes. The exhaustion of high-grade ores and other materials could lead to ever-increasing economic pressures to fund exorbitant pollution abatement costs on low grade commodities, and will lead to increasing exploration costs for new sources (Hayes, 1978). In order to wean society off of the virgin materials cycle there must be a realization that reusing and repairing valuable products through an intensive and organized system through formal policies is desirable and even critical (Hayes, 1978). These words are echoed somewhat by others who exclaim that cities have become valuable sources of resources and material, and that this fact must be followed up with action to reuse and reprocess the valuable commodities that lie within discarded items (Young & Sachs, 1994). In the City of Winnipeg, facilities such as the Re-Store have taken this concept and used it to collect and distribute still valuable materials that would otherwise likely go to the landfill, or scrapped.

In fact, using products more efficiently in the first place would place less pressure for subsequent reuse, but would also create jobs and stimulate the world economy and create new opportunities (Young & Sachs, 1994). The inevitability of one industry towns closing and forcing people out of work and out of their communities, may not have to be a reality, as long as sustainable solutions are found to develop new products. The concepts of source reduction and materials reuse must be more fully investigated as to their ramifications on local and global economies, as respective authors do not agree on their impact on either waste management or on the solid waste stream. Certainly they can be integrated with and become a part of a comprehensive waste management plan, which includes recycling, landfilling, and other schemes.

2.2.2 Recycling

The development of community recycling programs generally began in the 1970's in Canada with the birth of recycling bins or small depots which were operated by community groups or municipalities (Environment Canada, 1991). For industry, recycling was considered as a "do-good" activity which could not competitively provide the necessary quantities of materials to match cheap and abundant virgin supplies (Young, 1995; Whitaker, 1994). Little attention was paid initially to the amounts of materials collected, or to the destination for these collectibles which would have to be formulated into new products (Young, 1995). The sudden expansion of recycling programs between 1985 and 1993 in the United States caused an increase in the overall amounts of materials collected from 16 million to 45 million tons/year, with similar increases of scale in Canada (Young,

1995). Governments embarked on market development programs in order to relieve some of the pressure on the larger amounts of recyclables which were being collected and stored, but not put back into the system (Young, 1995).

In 1995, there had been extremely large increases in the prices being paid for recycled products. For example, the average price for a ton of used newspapers in the United States went from $2 in 1994 to $44 in 1995, while used corrugated cardboard prices increased from $14 in 1994 to $70 in 1995 (Young, 1995). While this substantial increase in the price of collected materials did not prove sustainable (markets have been very cyclical in the past), it is clear that recycling is expanding permanently and will be a fixture of the industrial sector (Young, 1995; Alexander, 1993). It must be noted that recycling systems must be integrated into an effective and larger overall plan for waste management in any given region (Sinclair & Kuluk, 1994). Developing recycling programs, and/or expanding the materials included, can greatly increase the cost to government, with the underlying assumption that governments have yet to realize fiscal benefits from waste diversion (Sinclair & Kuluk, 1994).

The development of Recycling Market Development Zones in the United States, notably in California, will help to allow for more dependable markets in the future for materials collected through recycling programs. There is even the testing of a futures market type of system for these commodities which will increase efficiency, and availability of the products (Young, 1995). The important point to note regarding recycling, according to Alexander (1993) is that the processors of recyclable goods require dependable, long term supplies of clean, homogenous materials in order to be effective and competitive. At the present time, household waste recycling systems are not the source of this steady and

dependable materials which are required by industry (Alexander, 1993). Recycling is a business, and while it may be worth doing for environmental reasons, it is still a business first and foremost (Young, 1995). Markets must become more reliable, and without the means of putting the collected recyclable materials back into the system through processing and market development, there can be no success for recycling programs.

There are many critics of the current state of municipal recycling programs. There has been an assumption made by governments and the public that recycling is simply "the right thing to do" (Baarschers, 1996; Crittenden, 1997). During the last decade, these critics claim, recycling has been offered to the public on a large scale without undue cost or material value considerations. Only now with large price fluctuations of paper products such as old newspaper have some governments began to wonder what programs they have developed, and how they may be improved (Menzies, 1997). Baarschers (1997) contends that we have attempted to mimic nature by recycling waste in our society, since there simply is no waste in nature, and everything is recycled by one or other organisms in a long chain of complicated ecological events. However, there is clearly negative aspects to municipal recycling when overzealous programs try to be all encompassing, and include all materials for pick-up. Some important consideration must be given to the actual raw materials that were used to make the products that are being collected, and the energy consumed in transporting and refining materials with low value such as glass and PET plastics (Baarschers, 1997). It is clear that communities should not recycle just because it may be what they perceive as the right thing to do.

2.2.3 Composting

Some waste managers are beginning to determine that the garbage collected at curbside not only is defined into recyclable materials such as plastic, glass, paper, and aluminum or food wastes; durable goods; textiles and rubber; and other waste material. These products are being defined as to whether they are organic and therefore compostible. In a number of municipalities including: Sherbrooke; Quebec; Vancouver; and Halifax, leaves and other yard wastes are collected at the curbside and processed centrally by the city (Environment Canada, 1996). While a variety of stewardship schemes are being implemented in many jurisdictions, yard and food wastes are not captured by these programs and therefore must be dealt with in another manner by regional or local government bodies.

Central processing of materials is more costly than when householders are responsible for composting their own waste products. This is mainly due to collection and processing costs and the infrastructure required. Across Canada, only 17% of households composted organic wastes at their home (Environment Canada, 1996), which could suggest that means of reducing this product of the current waste stream would help to reduce pressure on landfills.

A new perspective practiced by some waste managers is to look at MSW as simply wet or dry goods (Crittenden, 1998). For example, in Guelph, Ontario, the residential waste pick-up is divided into wet and dry bags for collection, and recycling collection was dropped. Wet wastes are typically kitchen scraps and other like organic materials including yard wastes such as grass and leaves. Wet wastes routinely account for 50% of the weight of the garbage (Crittenden,

1998). High quality compost is derived from the wet waste, and the valuable recyclables like aluminum are retrieved from the dry waste bags left at the curb. The city has achieved a 50% diversion of dry waste from the landfill, and a 75% diversion rate for the wet waste (Crittenden, 1998). While the costs per tonne are on a comparable level with the City of Toronto, Guelph is apparently achieving a 250% greater diversion rate from the landfill, than is Toronto (Crittenden, 1998). Despite this success, Guelph has encountered some problems recently, because of the greater cost associated with managing all of these bags collected at the curb as opposed to landfilling them (Ferguson, 1999). There is some concern among critics whether the program will continue, and other cities looking at adopting the full-scale program are now reconsidering (Ferguson, 1999).

Composting on a large scale appears to hold some promise as a means of making a significant difference in the landfill diversion rates for municipalities, and can produce a useful product in the end. Baarschers (1996), however, warns that making compost from organic material must be done with an acknowledgment of any external costs such as the energy used in the process, since this is a cost and should be listed as a negative aspect of the whole process. Central composting is also more costly for the municipality than at-home composters (Environment Canada, 1996). Composting figures from Manitoba state that organic wastes approximate over 30% of the MSW stream in the province (Manitoba Environment, 1996). One of the goals of the WRAP Strategy for Manitoba is to have the diversion of organic waste integrated into all waste management programs operated by the municipal and ICI sectors by the year 2000. In addition, to achieve the goal of 50% overall waste reduction by the year 2000, composting will have to be commonplace in Manitoba (Manitoba Environment, 1996). In the most populated region of Manitoba, the City of Winnipeg, it has been estimated

that without a large scale program to deal with residential organic waste any real decreases in waste production will be difficult (Gibson, 1999).

2.3 Waste Management Opportunities

Unlike the past where waste was simply removed and disposed of, these materials are now viewed in a much broader context involving management and careful consideration and planning involving multiple stakeholders and consultation (CCME, 1992). Rather than simply being an unwanted by-product of society, these so-called waste materials also present many opportunities as there is often value to be found in their sale or reprocessing. In order to take advantage of these opportunities and achieve the 50% reduction in Canadian waste by the year 2000, it is important to practice and institutionalize the 4 R's of waste management, and continue the development of markets. Another important factor is to determine the means for funding these integrated waste management programs. Through stewardship, where there is a partnership between government and industry, solutions may be found to the "who pays" dilemma (Sinclair & Kuluk, 1994).

There has been much research performed recently to determine the amounts and types of MSW produced in our society (CCME, 1992). With this factual information in hand it has become possible to develop and practice comprehensive stewardship programs whereby cooperation, and industry responsibility for their products, are both key factors. The collection of a small base of recyclable materials from householders once a week is not appropriate action on behalf of government and industry (Hawken, 1993). In order to reach waste reduction

targets, there must be a broad effort which includes the consideration of economic, environmental, public, stakeholder, legislative, and other concerns including the assessment of the materials usefulness to society (CCME, 1992). For instance, the role of packaging materials in food and product protection must be acknowledged. For waste reduction purposes alone, it would be inefficient and potentially dangerous to restrict or eliminate packaging altogether due to health and safety concerns. Rather than denying the need for these and other products, they can be rationalized. Through consultations, packaging can be either reduced or modified to fit into a larger waste management or stewardship program.

Proper waste management requires an approach that utilizes, or at least considers, all options of management. This newest approach in dealing with municipal waste is termed integrated waste management. This method requires that managers not only look at disposal options or recycling and re-use options, but most importantly, the means of reducing the amounts of waste produced in the first place (Environment Canada, 1996). Integrated waste management is important because it focuses not only on the end product, which is the waste, but also the specific materials which go into making up this waste. Devising and implementing means of reducing waste at both the source and at the landfill will benefit both the public and the environment. This means less space required for landfills and less tax dollars required for managing the waste.

2.4 Summary

As waste management began as a tool to promote public health and avoid many of the observed health issues resulting from concentration in urban centres,

this last century has seen dramatic changes in the means of dealing with waste in our society. Landfills have become safer and cleaner through technological advancements in monitoring and special liners. Materials are being recycled like never before (apart from the world wars), incinerators have become efficient and relatively clean as a method of harnessing energy from waste. All of this while reduction, reuse, and composting campaigns have taken flight in most regions in North America. Through all of this change has come a realization that not enough has been done to solve the perceived problem of the waste produced in our society. We must stem the loss of valuable resources, which end up in the city dump.

Recycling has always been a difficult balancing act, due to the cyclical nature of the prices attained for the collected materials on the open market, compared to the relatively stable fees paid for landfilling this same material. In essence, while any given commodity could be valuable one month as part of a regional recycling effort, it may not be worth collecting the next, and becomes a drain on the municipal treasury to deal with and dispose of. This diversion of material from the landfill is not the sole reason for recycling, but it does help to display some of the confusion and difficulty, which can sometimes cloud the issues of recycling and collection. Reduction and reuse, and composting are also part of this equation as communities and local governments grapple with fact and fiction in order to deliver effective programs and services, which address public concerns and offer a "greener" alternative to landfilling.

The responsibility for the costs of recycling and other programs have often fallen onto the public in the past when they were unable to be self-supporting. This, among other matters, has helped spawn the need for a new approach to dealing with not only the waste materials of our society, but also the concept of

"who pays". Public and government concerns have helped bring about the concept of stewardship, as a new approach in dealing with not only the waste materials of our society but the funding to properly deal with them, and the responsibility of the manufacturers and distributors of those products. Society has struggled with the concept of "polluter pays", in attempts to provide a more rational approach to the managing of waste. By instilling some sense of responsibility on producers of the waste products entering the landfills, and incinerators, the actual creators of those goods will become more responsible for the costs associated with their disposal. This includes finding better and less wasteful means of producing these goods.

Landfilling, and other waste management options are and will continue to be an important function in our communities, as they contribute to improved public health, and safe living conditions. But even jurisdictions that have large disposal capacities, and low disposal costs are seriously considering new options for waste, as they view those jurisdictions currently in difficulty with their final treatment options available (Fenton & Sinclair, 1996 - 3). As we will see, there are other means of managing these "waste" materials after their initial use is completed by the purchaser.

Chapter 3
Packaging Stewardship

3.1 The Development of Packaging Stewardship

The type of stewardship most often discussed at present, is packaging stewardship. Packaging stewardship has been defined by one agency as *"...the principle by which industries assume responsibility for the environmental impact caused by the packaging that they introduce to the marketplace"* (Canadian Council of Ministers of the Environment, 1994). This definition has evolved somewhat and recent documents clearly state that stewardship should become the responsibility of all of those who benefit from the designated packaging. In other words, this means shared responsibility. For example, the Canadian Council of Ministers of the Environment by 1997 had transformed their definition of packaging stewardship to include the desire that all those who benefit from packaged products are to be held responsible for their management (Environment Canada, 1997). Those responsible include: consumers, governments, and the producers of the products and packaging, where before it was suggested that only the latter party would be given primary responsibility.

As stated through the CCME (Environment Canada, 1997), the whole responsibility for reducing the packaging portion of the MSW stream does not rest with industry. Consumers must make informed choices about the products they purchase and governments must ensure an equitable and consistent regulatory framework exists to promote a viable stewardship program (Canadian Council of Ministers of the Environment, 1994). Consumers will more clearly be able to choose products, and affect positive change when the externalities associated with

the products they are offered are reduced or internalized into the costs of those products. Without this internalization of costs associated with the development and sale of a given product, consumers will be incapable of demanding more sustainable products or packaging because the appropriate feedback mechanisms will not be in place. Put more bluntly, one advocate claims that consumers are the most important element in this issue. Once consumer's start paying for disposal of their waste in a direct form, rather than through taxes, any existing waste problem will soon be solved (Crittenden, 1997). This is because manufacturers would have to become more efficient in their use of packaging, and this would bring out greater reductions in waste than any other method, through consumer demand. Retailers and transport companies would have an economic interest in providing the most efficient blend of packaging and its removal, since consumers would be directly responsible for both, and would demand efficiency (Crittenden, 1997).

Packaging can take many forms but typically includes plastic, glass, aluminum, or other food and beverage containers, as well as virtually any other material surrounding a purchased object. This also includes materials and boxes involved in shipping goods, such as plastic wrapping and pallets. Packaging waste generally makes up one-third of garbage by weight (Garbage, 1993), which in Canada would equal approximately ten million tonnes per year and, as such, is the largest single component of MSW by weight (Environment Canada, 1991).

Due to the significant amount of packaging waste being produced in Canada, and as a very visible waste byproduct, this has been the MSW component largely focused upon by regulatory agencies for stewardship. An example of this approach is the National Packaging Protocol in Canada (NAPP) which has existed since 1989 under the direction of the Canadian Council of Ministers of the

Environment, with the role of bringing stakeholders together for the purpose of attempting to reduce packaging waste. Countries other than Canada have also embarked on stewardship programs for dealing with packaging waste, most notably Germany, France, Belgium, and Britain (Fenton & Sinclair, 1996 - 3). The approaches are quite varied (Fenton, 1994 - 2) and demonstrate that stewardship of these materials can take many different forms.

3.2 National Packaging Protocol

The National Packaging Protocol developed in 1989, stemmed from a need in Canada, that was recognized by the Canadian Council of Ministers of the Environment (CCME), for overall per capita packaging waste reduction in order to meet a proposed 50% by weight target by the year 2000 (Canadian Council of Ministers of the Environment, 1992). In conjunction with this overall waste target is a packaging waste reduction goal concerning overall packaging material which is to be achieved through milestones consisting of reductions which achieve a 20% level by 1992, and a 35% level by 1996, before an end reduction of 50% is achieved by the year 2000 (Environment Canada, 1997). The CCME announced that a packaging weight of 4.24 million tonnes was disposed of in landfills in 1992, comprising a 21% reduction compared to the base year of 1988 (Environment Canada, 1997). A multi-stakeholder group entitled the National Task Force on Packaging was then established to develop a national policy on packaging which would be consistent with those principles adopted for waste reduction by the CCME (Canadian Council of Ministers of the Environment, 1992). In 1998, the NAPP proudly announced that it had actually exceeded the 1996 goal of a 35% packaging reduction and indeed had met the 50% reduction

under the voluntary program, a full four years before the year 2000 deadline (RCBC, 1998).

A database was developed through NAPP which comprises the annual expenditures on packaging materials by Canadian industry between 1979 and 1986, with those purchases projected through to the year 2000. This information is based on the dollar value of packaging used in Canadian industry, rather than the tonnage of material employed. The weight of the material is acknowledged by the task force as more useful, but the value is still valuable as a measurement tool. In addition, the information does not measure packaging imported into the country (Canadian Council of Ministers of the Environment, 1992). This shortcoming has obvious ramifications since this imported materials and associated packaging, regardless of origin, must still be managed in local waste streams across the country. Nonetheless, this is a good starting point to be able to measure the nation's progress on waste reduction and packaging stewardship.

The NAPP has spelled out the potential for recycling, reducing, and re-using packaging materials. This information details the potential for each material by how it would be managed through being either reused, recycled, or reduced (Canadian Council of Ministers of the Environment, 1992). This information has been widely acknowledged and accepted by industry involved in the NAPP process as achievable in theory, however, it may not be economically possible, or indeed practical, to achieve these numbers under all circumstances for all materials (Canadian Council of Ministers of the Environment, 1992).

Not until 1996 were these ideas and information formulated into a practical concept, which became the basis for the fourteen Packaging Stewardship

Principles, which were adopted by the respective CCME ministers (Environment Canada, 1997). This process left less than 4 years for responsible authorities to adapt and use the principles in order to assist them in their attempts to achieve the waste reduction targets for the year 2000 that were accepted as necessary by the CCME, and ensuring that packaging has a minimal effect on the environment (Environment Canada, 1997). In 1997, the NAPP's principles had been advanced into a proposed national stewardship model put forward by Environment Canada (1997), comprising the following ideals:

- be based on the 14 packaging stewardship guiding principles (Appendix IV);
- be consistent with the policies of NAPP;
- identify national elements of packaging stewardship while recognizing and accommodating regional needs and differences;
- serve as a tool for NAPP task force members and others; and
- be broad in scope and provide a long term vision.

While the NAPP has been developing a stewardship framework for national and provincial programs to emulate, including developing evaluation criteria, provincial programs have already been implemented in a patchwork across Canada. This took place without the necessary guidance at the national level (Environment Canada, 1997). Each province has had to acknowledge the need for local and regional recycling programs, and have gone ahead without the necessary cooperation which could have lead to a more cohesive and effective national network. The inconsistency which exists poses problems for manufacturers and distributors of products, as well as consumers since nationally marketed products are not dealt with on a consistent basis and this has reduced industrial

competitiveness and raised overall prices for consumers (Environment Canada, 1997).

While the NAPP is an important process and a good guide for measuring progress and presenting important issues regarding waste reduction and stewardship, some flaws have been noted. The NAPP is weakened by a lack of obligations on behalf of industry and the provinces to achieve the goals of the protocol, including waste prevention, take back measures, and life-cycle reporting (Fenton & Sinclair, 1996 - 1). Even though the NAPP process is attended by representatives from each province and territory including the Federal government, each of these respective jurisdictions has developed their own stewardship programs in a vacuum. Without a recognition for partnerships and cooperation between boundaries, some evolving programs may be unrealistic. It is ironic that the goals of a national model were that the program be based on national elements, and be broad in scope while provinces as small as Prince Edward Island have gone about the business of actual program development in isolation.

While there have been criticism of the NAPP process, there does appear to be progress just the same. The targets are apparently being attained, and indeed exceeded, according to the CCME. However, most believe that a true 50% reduction by the year 2000 is not really attainable (Bury, 1999). Recent achievements in the industrial and commercial sector, dealing mainly with transport packaging and corrugated cardboard, has allowed for significant reductions in waste, and they should be taken as a positive step. These reductions may be equivalent to a 50% reduction or more within the ICI sector (PPEC, 1998). The difficulty with this voluntary program is that there will be free-riders who do not alter their processes or take an active part in the needed reductions, regardless

of the achievements possible (Environment Canada, 1997). In this way they benefit without altering their methods, and have an initial advantage over their competitors who have often put potentially significant company resources into change. While the NAPP is being wound down, questions remain as to the methodology used in the process, and the results, which have been achieved. Regardless of the actual waste reduction numbers, the NAPP exercise has allowed for input and discussion into the issue of packaging waste.

3.3 CIPSI Initiative

The Canadian Industry Packaging Stewardship Initiative (CIPSI) was a proposal first offered to the province of Ontario, and eventually to the entire country, by the 118 members of the trade association, the Grocery Product Manufacturers of Canada, in 1992. While the new proposal was deemed a voluntary product stewardship initiative, some feel the true goal of the proposal was to thwart efforts by the newly elected NDP government in Ontario in legislating some form of mandatory product stewardship program perceived by the trade association as a negative impact upon their members (Chang et al, 1998).

With a potential program legislating a form of product stewardship, prescribing responsibility to the manufacturers for the environmental impacts of their products, a voluntary program such as prescribed in CIPSI appeared to be a less costly alternative to the grocery product manufacturers (Chang et al, 1998). The international soft drink companies were also involved in the development of the CIPSI proposal, as were other trade associations, attempting to avoid what they perceived to be costly recycling quota systems and (or) restrictions on packaging

materials and distribution (Crittenden, 1997). It is well known that the Canadian beverage producers have been reluctant stewards, and that they have bitterly resisted any forms of take back legislation on their containers (Recycling Council of British Columbia, 1996).

The initial CIPSI proposal in Ontario incorporated an industry managed fund which would provide municipalities with two-thirds of the costs of their locally run recycling programs for management of eligible materials (Chang et al, 1998). The thrust of the proposal involved a commitment to a 50% diversion rate by the year 2000, and the shared responsibility approach (CIPSI Ontario, 1992), which would allow the manufacturers and distributors of products to lessen their responsibility for the materials they presented to consumers on grocery shelves. many concerns were raised, by groups including the municipalities of Ontario, which disagreed with the proposal to exclude the heaviest portion of MSW from the CIPSI proposal, which consisted of newspapers and magazines (Chang et al, 1998).

While the CIPSI process started in Ontario, there were similar negotiations which took place in other provinces, including Manitoba, British Columbia, Quebec, Newfoundland, Nova Scotia, and New Brunswick, with similar stakeholders present at the table. The national CIPSI proposal was based upon four key guiding principles (CIPSI, 1993) as follows:

- shared responsibility: between industry, government, and consumers;
- cost-effective: cost efficient and environmentally effective;
- integrated total system: flexibility to fit into broad national system,
- incentive-based: market driven incentives to address 3 R's.

The CIPSI Ontario process has only recently been confirmed as a failed venture. Citing backtracking and wavering support from the Ontario government, the CIPSI industries, in November of 1996, suspended their process until they are given a clear sign from the government that they would be supporting the venture. As of 1998, there has been little indication from the government that it is interested in pursuing the matter. CIPSI has been suspended since this date, and it is believed that it will not ever be meeting again (Chang et al, 1998). But, it is too simple to believe that this process in Ontario failed because of lack of government support. The industries only began their process at the threat of government intervention into industry's waste management of their product. While these industries were lobbying for a product stewardship program, which they themselves could control, they would surely rather have no program at all. Therefore, while CIPSI has essentially failed in Ontario for various reasons, it will not likely be independently rekindled by the industries, which first proposed it. This stalemate is likely reinforced by the Ontario government's statement that there are no plans to enforce any of the laws relating to refillable sales requirements or other initiatives (Chang et al, 1998). In essence, through a failed attempt at delivering their own style of stewardship program to the Ontario government, as well as other provincial governments, the manufacturers and distributors of consumer goods have managed to release themselves from almost all obligations.

In a recent announcement made by Ontario's Minister of the Environment, industry was encouraged to contribute a total of $20 million towards the Ontario Blue Box program (McAndrew, 1998). The municipalities, responsible for funding the recycling program, have condemned the government for withdrawing financial support, and leaving the recycling program in a funding crisis (Urquhart,

1998). The government appears unwilling to go further to ensure industry takes responsibility for the recycling program, and has sided with the soft drink and beverage companies which had lobbied to avoid a deposit/return system for their containers (Urquhart, 1998).

3.3.1 CIPSI Manitoba

In Manitoba, the CIPSI proposal was formally presented in July of 1993, but as in Ontario, it failed after much negotiation and debate. CIPSI Manitoba proposed to collect a levy on products, which would then allow for funding support of municipal recycling programs. Negotiations, however, broke off in 1994 after two years of discussions between government and industry (Recycling Council of Manitoba, 1996). A failure to agree on levels of financial liability, and specific program elements lead to the termination of the negotiations in 1994 (Manitoba Environment, 1996). There were many criticisms of the CIPSI process, although much credit was given to the coordinators of CIPSI for being proactive in its approach to putting a national packaging stewardship program into the spotlight in Canada, and for bringing together different stakeholders with the aim of a national consensus. In Manitoba, reservations about the initiative included (Recycling Council of Manitoba, 1994):

- incomplete information concerning levies and program costs;
- the goals of overall waste reduction were not given enough attention, given that packaging waste is only a portion of this waste;
- lack of public input; and

- questionable financial viability, leaving taxpayers at risk of open ended support of the program if there is cost overruns.

Further proposed by the Recycling Council of Manitoba (1994), was that certain guarantees and amendments be made by the proponents of CIPSI, which included: long term financial commitment; life-cycle analysis; public education; multi-stakeholder participation; waste reduction incentives; broaden scope of materials covered; and a maintenance of all provincial regulatory powers in terms of the WRAP Act.

While the CIPSI process did ultimately fail in Manitoba, as elsewhere, the process and the ideas it initiated did result in a new program with a new name. In June of 1994, the Manitoba government announced the Manitoba Product Stewardship Program. The similarities with the CIPSI proposal were unmistakable, however, one major difference was that the levy revenues would be managed by a board. This would be operated at arm's length from government, rather than the industry groups as proposed through CIPSI Manitoba. The CIPSI process may not have developed into a program unto itself, but the influence it exerted as a catalyst in the development of the MPSP is obvious, even if it required the looming threat of government legislation.

3.4 Provincial Programs Overview

The "stewardship" programs which currently exist across Canada are varied in their scope of both the products collected, and their means of funding. Some programs are based on the collection of levies or taxes at the distributor level,

which in turn is almost universally derived from the consumer at the retail level. This is the case in Manitoba. Other programs receive at least a portion of their funding through some type of deposit system whether this is deposit-refund or half-back deposits on beverage containers. Systems exist whereby a mixture of fee and levy instruments and deposits are employed. The universal theme in programs across Canada is the use of beverage containers to derive funding for the recycling and stewardship initiatives. It has been argued that charging a levy on these readily available products is the simplest means of achieving a funding mechanism (Multi-Material Stewardship Board, 1995). Some provinces are considering expanding the levy base or deposits to include other packaging materials, but progress has been slow. There are stewardship programs in place for used oil products, tires, and other materials in many provinces such as Manitoba and B.C., but this research focuses on packaging stewardship.

The use of taxpayers money drawn from provincial or municipal government treasuries in Canada is another common method of funding recycling, at least in part. This is especially true in Ontario, where the Blue Box program receives the bulk of funding through public money. Partnerships between government and business (both product manufacturers and distributors) of various types do exist in different provinces. Boards comprised of stakeholders including government, business, and community concerns have been assembled for varying purposes. This includes offering advice and management of stewardship and recycling programs. A basic overview of the different deposit-refund programs and (or) stewardship programs which currently exist in Canada's ten provinces are contained in Table 4, below:

Table 4

Canadian "Stewardship" Initiatives

Province	*Population*	*Funding*	*Redemption*	*Financing*
British Columbia	3,886,592	Deposit-refund for beverage conts. 5-30 cents	Returned to depots or retailers	Brand owners
Alberta	2,856,086	Deposit-refund for all beverages.5-20 cents	Returned to depots	Brand owners
Saskatchewan	1,022,537	Deposit-refund for all non refillable beverages. 5-40 cents.	Returned to depots	No designated steward
Manitoba	1,143,524	2 cent levy on all beverage conts, for multi material recycling	Shared funding of municipal recycling programs, on an 80-20 basis	Product distributors
Ontario	11,252,425	Local recycling municipal funded. Industry funding Voluntary.	Refillables to retailer, others to curb collection for 80% of households	No designated stewards.
Quebec	7,389,137	Deposit-refund. 5 + 2 cents handling fee for 1 way containers, 10 cents for refill. Levy on industry	Containers returned to retailers and depots.	Brand owners and industry. Government contribution
New Brunswick	762,501	Half-back deposits for all beverages. 10-20 cents	Containers returned to depots	Brand owners
Nova Scotia	942,796	Half-back deposits for all beverages. 10 cents	Containers and other materials returned to depots. landfill ban.	Packaging industry
P.E.I.	137,312	Deposit-refund for all beverages of 10-80 cents, with % held back.	Containers returned to depots or retailer.	Beverage industry
Newfoundland	570,711	Half-back deposits on all beverages of 6 -20 cents	Containers returned to depots	Beverage industry & government

*Sources: RCBC (1996); Menzies (1997); Crittenden (1997); RCO (1998).

note: While every effort has been made to be precise, due to the changing nature of programs across the country this information may not reflect the most current situation in each province.

The financing of these various provincial programs is often a shared responsibility among different actors. The term "steward" does not apply to some provinces, since there is no packaging responsibility designated to a specific entity, other than that implied on the consumer.

The two territories in Canada have encountered great difficulties in trying to implement beverage container recycling initiatives, due to the great physical distances between communities and the distances to markets for materials collected. While current legislation allows for mandated recycling of designated materials, there has been little progress on the matter other than in the large cities. The two territories have, however, been somewhat successful at managing the collection of liquor bottles with an approximate 70% container return rate (Environment Canada, 1997).

3.4.1 Provincial Program Characteristics

The programs across the country are varied and each has unique components which will be summarized in the following section. One must heed that this information is current to 1998, and due to the dynamic nature of the initiatives, may be somewhat different than the current reality.

3.4.1.1 British Columbia

British Columbia is considered one of the more advanced stewardship programs in Canada (Bury, 1999). The reasoning for this is the fact that there are

opportunities to recycle or re-use many products ranging from car batteries and tires to paint, oil, and other hazardous materials, and metals. Producers of these materials for sale in B.C. are responsible for submitting stewardship plans for their proper management and collection. In conjunction with this is the fact that B.C. has the oldest deposit-refund system in North America, which applied originally to beer and soft drinks, but now has expanded to other containers. These include all carbonated and non-carbonated drinks, teas, wine, spirits, water, and fruit juices which includes aseptic containers (Menzies, 1997; RCBC, 1998). The fully refundable deposit rate ranges from five cents to thirty cents, according to container size.

The Provincial government is not directly involved in the management and operation of packaging stewardship initiatives across the province. Instead, it has appointed a container management board made up of 19 members representing various stakeholders. This system is driven by provincial government regulation. The Beverage Container Stewardship Program Regulation (BCSPR) which was introduced in 1998 is intended to increase the number of returned beverage containers from 700 million to 1 billion annually (RCBC, 1998). This represents a return rate of 85% of all beverage containers sold, which must be managed by the provincial stewards, and achieved within two years (year 2000). The provincial stewards in B.C. become the brand owners which take over from the retail outlets, who had been collecting and managing containers until the 1998 amendments (RCBC, 1998).

The brand owners in B.C. must have stewardship plans approved by the container management board, which outlines how non-recyclable containers will be phased out of use, and how recyclable containers will be managed outside of

the waste stream. An organization has been licensed to operate collection facilities on behalf of brand owners. To allow consumers to gain refunds on their containers, various locations for take-backs including depots and grocery stores as well as proposed "reverse" vending machines have been arranged (RCBC, 1998). Separate agencies exist to operate the liquor and beer collection systems. The provincial government proposes $7 million will be saved by local governments on recycling, landfill, and litter costs which have now been shifted to brand owners and their agents (RCO, 1998).

British Columbia has set a good example for other Canadian programs on how to achieve a form of stewardship which shares components of programs practiced in Germany and other European countries (Bury, 1999). It is ambitious, and while still in the initial stages of development, promises to ensure that containers will only be in the provincial system if they are properly managed after first use. This program operates alongside the stewardship initiative on hazardous materials, which promises to collect and restrict dangerous goods from provincial landfills.

3.4.1.2 Alberta

Like B.C., Alberta has a deposit-refund system in place, which charges between five and twenty cents to consumers per container, according to size. While this program has been in existence for many years, it is now being managed by an industry led beverage container management board since 1997, representing brand owners, municipalities, government, and public interest groups (RCO, 1998). The provincial government maintains control of the standards for

operations through policy and legislation which basically limits the board and its activities. The board maintains control for collection, recycling activities, and permitting for containers and their handling (RCO, 1998). All containers, other than milk, are covered under the system, including glass, aseptic, or any other beverage container material (Environment Canada, 1997). Alberta was the first province to place a deposit-refund on juice and drink boxes, and did so amidst heavy opposition from industry which opposed the refund system as a tax on consumers (Winnipeg Free Press, 1997).

Depots are located across the province and handling fees are paid by the stewards to the Alberta Beverage Container Recycling Corporation to service the centres, and market the materials collected. The charge paid by manufacturers and depot operators to the board is 0.05 cents per container recovered, equal to approximately $300,000 in 1997. In 1997, 600 million beverage containers were returned to the system through the approximately 200 depots serving the entire province, representing a recovery rate of 80% (Valiante, 1998). The remaining 20% of unredeemed deposits represent approximately $10 million in revenue which are then applied to help cover the costs of operations (Valiante, 1998). Cities within Alberta operate multi-material recycling programs independently from the beverage container program, to recover other materials from the waste stream.

It is estimated that the net costs associated with each container managed in the system equals approximately 0.8 cents, or less than a penny per container on average (Valiante, 1998). This represents the net, or "out of pocket", expenses applied to the manufacturers of the products, since they are subsidized somewhat by the $10 million in unredeemed deposits. Without this windfall, the total cost

would more closely represent more than 2 cents per container. While the system keeps improving the redemption rate on containers every year, this represents a relatively larger share of costs which must be borne by the brand owners of the beverages, increasing their "out of pocket" costs to run the program.

3.4.1.3 Saskatchewan

Saskatchewan is another province which operates under a deposit-refund system for all non-refillable beverage containers sold in the province, ranging from 10 cents to 40 cents, depending on the container size. Previously, a levy of 8 cents was charged towards every purchase of aseptic drink containers or boxes, because they were not part of the deposit-refund scheme, nor are milk products (although milk producers pay a voluntary fee to cover handling costs of their containers). Since 1998, a 5-cent refundable deposit has been applied to all aseptic containers. This is in addition to the continued application of a 3-cent levy, or Environmental Handling Charge, which is applied to all aseptic packaging products. Saskatchewan enjoys a redemption rate averaging 95% on all containers (RCO, 1998).

Collection depots are operated by the Saskatchewan Association of Rehabilitation Centres, also known as SARC or SARCAN, which has an exclusive contract with the provincial government to operate 70 facilities (BCRC, 1996). There is no designated steward in Saskatchewan, as the government has contracted out the management of the program to SARCAN, and funds the organization at a level where they will recover their costs. All revenues generated from the deposit fees that are unredeemed, are returned back to the provincial government, where it

is channeled back into the general revenue fund. These funds, since 1992, have not been directly used to provide any programming for waste reduction opportunities or environmental benefit. There is no accounting of how sustainable the program is, but it has been estimated as the highest cost container handling system in the Western provinces, due mainly to the small population density it serves (RCBC, 1996). An important element regarding the high costs of the program in Saskatchewan may be the flooding of materials from Manitoba and Alberta, creating a burden on the system (Romaniuk, 1999). Manitoba does not pay a refund of any sort, and Alberta's is less than Saskatchewan. Therefore, products for which no deposit has been paid, but which are refundable have negatively affected the program's bottom line. Recent changes have been made to ensure that out-of-province containers do not pose as large a threat in future, by imposing stiff penalties on people bringing these containers illegally into the province for refund (Romaniuk, 1999).

Multi-material curbside collection services are only currently running in Saskatoon and Regina, and are voluntary (fee for service) based for householders. Regina does offer free collection bins for newsprint. None of the Western provinces, apart from Manitoba, employs a multi-material recycling fund to spread recycling opportunities across their territory.

3.4.1.4 Ontario

Canada's largest province has no assigned steward for the responsibility of dealing with packaging and packaging waste. While a government imposed refillable quota of 30% of product sold is in place, the real rate is approximately

2%, and falling (Menzies, 1997). The current government has an open policy of not enforcing the mandated quotas. Rather than redemption centres or depots offered to the public, non-refillable containers are collected through a multi-material recycling program which serves approximately 80% of all households, representing 85% of the population (Menzies, 1997). The soft drink container diversion rates are purported to be approximately 90% in the province (Hare, 1998). By law, every municipality in the province over a population of five thousand must operate recycling programs for residents, through a Blue Box program. While largely funded between 1985 and 1996 by provincial government funds, the Blue Box program is now a wholly municipal responsibility. This has created some funding problems for municipalities, who have had to unilaterally exclude some non-marketable items and cut back on collection (Crittenden, 1997).

The industry group Corporations Supporting Recycling (CSR) have contributed small amounts on a voluntary basis to the Blue Box program, and their role has remained unchanged even with recent modifications made by the Ontario government. Instead, the CSR has been asked to "donate" $20 million to ensure the Blue Box remains viable. The plan was met with utter contempt by the industries and distributors who refused to participate in what has been deemed a charitable scheme (Urquhart, 1998). As requested by government, the CSR in 1999 is to form a board of representatives in order to provide input into recycling initiatives, and ensure the maximum diversion rates are achieved (Urquhart, 1998).

The future of recycling in Ontario has been somewhat questionable for the last decade as industry, consumers, and governments grapple with the questions of producer responsibility and funding. Since the failure of the CIPSI process in the province, recycling initiatives have remained stagnant, even though waste

reduction initiatives on the local level are advancing through user-pay garbage systems, and large scale composting projects (Crittenden, 1998). In the end, the lack of a definable packaging steward, and the strong willingness of industry to support (apart from financial means) the continuation of the existing Blue Box system, has combined to deny stewardship a foothold in Canada's largest province.

3.4.1.5 Quebec

The Quebec government introduced a ten year Waste Management Action Plan in 1998 which assigns partial responsibility for industry to become stewards of their products. Through this plan, industry will become responsible for approximately $22 million in contributions towards waste reduction initiatives across the province (C.E.R.C.N., 1998). These initiatives include: mandatory municipal recycling initiatives; beverage manufacturers to become stewards for their non-refillable containers; gradual elimination of ICI waste going to landfills; and plans submitted by industry (voluntarily) and government to help divert waste (C.E.R.C.N., 1998). Recovery plans and targets are to be put in place for paints, textiles, oil products, tires, pesticides, and organics.

A deposit-refund system has been in operation in Quebec since 1990, managed by Recyc-Quebec, which is a crown corporation, and funded partially by beverage producers. The beverage container recovery rate was estimated to be only 50% as of 1996 (RCBC, 1996), with materials going to retail outlets for redemption. Industry has sold the materials collected in the past for recovery and retained the scrap value. It is not known at this time how the deposit-refund system which exists will be affected by the new Waste Management Action Plan,

however, Recyc-Quebec will retain management of the stewardship activities in future, with some input from industry stewards.

The provincial government will contribute money to new initiatives on the order of approximately $12.5 million for research and development. This includes composting and organic projects, development of markets for recyclable products, and resource recovery projects (C.E.R.C.N., 1998). This money will complement the industry contribution of $22 million. This announcement has only recently been made, therefore progress to date, and the time period involved for implementation of all of the above programs, is not clear. Clearly, the plans call for a province-wide approach to the diversion and reduction of waste with clear monetary and resource contributions from industry.

3.4.1.6 Nova Scotia

Nova Scotia has been commended as one of the more advanced provinces with regards to waste reduction initiatives in Canada (Bury, 1999). The government introduced a deposit-refund system for all beverage containers, besides milk, in 1995 as part of a province-wide strategy to deal with waste. Included in this strategy was an outright ban on all beverage containers from provincial landfills starting in 1996 (RCO, 1998). The beverage industry is not allowed to reduce the level of refillable bottles in the system from their proportion of market share, which existed in 1994. This exists to facilitate re-use. The container ban has now evolved into a ban on all organics as well as glass, newspapers, hazardous materials, cardboard, auto batteries, tin, and some plastics (other than PET). There is also a proposed ban on organics with the impending

development of large scale composting facilities in order to reduce landfill pressure (RCO, 1998; RCBC, 1996). These changes were proposed amidst pressure from the packaging industry, which has opposed the landfill ban on many of these materials.

There are 85 depots set up to collect containers from consumers, as well as all other materials restricted from landfills. These depots and all aspects of the deposit-refund system are managed by the Resource Recovery Fund Board (RRFB) which was created by the government as an arm's length operation. The board includes representation from the beverage, packaging, publishing, and manufacturing sectors, as well as provincial and municipal representation. The board is funded by the half-back system of deposits which it manages and controls, with a stipulation that a minimum of 50% of the revenues generated must return to municipal government for local initiatives including curbside recycling programs (RCBC, 1996).

The province has been divided into seven regions, with each of them submitting plans on waste reduction initiatives to the provincial government, with the intention of reaching a 50% waste reduction goal by the year 2000 (Environment Canada, 1997). There has been a large degree of cooperation on these initiatives from other Maritime Provinces due to their close proximity and the long, shared borders.

Recent problems have been encountered with the lack of markets for some plastics, other than PET, including plastic milk containers. As of 1998, materials had been stockpiled in some communities. An industry and government strategy

was to be developed to find markets and opportunities for collected materials, and further develop the initiative (RCO, 1998).

3.4.1.7 New Brunswick

A beverage container deposit-refund system (half-back) was introduced in this province in 1992. Refillable Containers are redeemed for a full deposit, while non-refillable are redeemed for only half the deposit amount (RCBC, 1996). New Brunswick introduced the system. The redemption rate approximates 80% for all beverage containers, which are returned to 87 registered depots. The depots are funded through a handling fee provided by the different members of the beverage industry, according to their products, to ensure that they do not lose money (RCBC, 1996). About 10% of the population has access to curbside recycling. Deposit system funds are dedicated to recover beverage containers, and promote local recycling programs.

Two industry consortiums have been formed to manage and market the containers collected by the depots, with alcoholic beverages overseen by one, and all other containers managed by another. Unclaimed deposits and material revenues are put back into the beverage container recovery system, to top up the industry contribution. Revenues from the held back portion of the deposit paid by consumers are put into other environmental initiatives through a trust fund managed by the provincial government (RCBC, 1996). Attempts have been made to assign actual costs associated with the management of each of the specific containers in the system, with the goal of determining and assigning the true costs. Life cycle management plans for all beverage containers sold in the province have

to be conducted and then submitted to government by industry stewards (Environment Canada, 1997).

3.4.1.8 Prince Edward Island

The smallest province in Canada has one of the most advanced beverage container management systems, due largely to the government ban on most beverages sold in non-refillable containers. All beer and soft drinks have been sold in refillable containers since 1984. Wine and spirit containers are redeemed based on a half-back system of deposits, which began in 1992, with refunds returned to consumers at the retail level. A recovery rate averaging 97% has been achieved for most types of containers which can be returned to depots and retailers (Menzies, 1997).

The deposits paid by consumers range from 10 - 80 cents depending on the container size, with a portion of that held back after redemption. The money remaining is used to manage the containers in the system, with beverage producers acting as stewards for their material, paying the costs of handling and operations at the provincial depots (RCBC, 1996). The average soft drink container in the system is approximately eight years old, being re-used many times (RCBC, 1996). Due partly to size, and to the non-refillable ban, a niche market has developed for small beverage companies. They compete with the larger brand name companies, offering a wide selection of product to islanders (RCBC, 1996). P.E.I. has gone against the Canadian trend of allowing soft drink companies to become disconnected from the container management systems. Beverage companies act as

stewards not only for funding means (along with consumer contributions), but also in collection and re-use of the material.

In addition to the refillable bottle management system, a province-wide plan allows for curbside recycling of source separated garbage, organics (including yard waste), and multi-material recyclables (RCO, 1998). This plan costs $130/year for each homeowner including all associated costs including tipping fees, and landfill development and operation, and all equipment necessary (RCO, 1998). It is not associated with the beverage management system. The small size of the province has allowed for this comprehensive plan to be instituted throughout its territory, with relative ease.

3.4.1.9 Newfoundland

In 1997, Newfoundland began the "Green Back" deposit-refund program for all beverage containers sold in the province, apart from milk (RCO, 1998). The program is similar to the half-back deposit systems operated in New Brunswick and Nova Scotia, whereby half of the deposit is returned to the consumer upon delivery of the container to a registered depot. In Newfoundland, the deposit paid is six cents per non-alcoholic container regardless of size or contents, with three cents returned upon redemption. Alcoholic beverages (spirits) have a deposit of twenty cents with ten cents returned at the depot (RCO, 1998). There are 37 depots across the island, not including smaller outlets which cater to more sparsely populated areas. In the first year of operation, a container return rate of approximately 50% was achieved.

The program is managed by a board set up as the Newfoundland and Labrador Waste Management Trust Fund, which oversees the deposit-return system and all funds collected. The board is made up of representatives from industry, consumer groups, and government, and has the authority to investigate the feasibility of other materials which could be managed under its auspices (Environment Canada, 1997). Paper, waste oil, and tires are to be included in future stewardship initiatives (RCO, 1998).

3.4.2 Provincial Summary

As stated previously, the focus on beverage containers dominates all of the provincial packaging stewardship initiatives from coast to coast. These programs have different structures, but the main theme, apart from P.E.I., is the encouragement of the maximum amount of recycling of one-way non-refillable containers. The policy efforts towards addressing beverage container packaging has limited the successes of the provincial programs to this limited portion of the waste stream. Programs are evolving which purport to reduce other portions of the waste stream, besides beverage containers, and involve producers and distributors of packaging as responsible partners. In P.E.I., there is a ban on providing beverages in anything but refillable containers, and this has set it apart from the other provinces. The Province of B.C. has moved to impose financial and take-back obligations on beverage producers, in a new program that will lessen the responsibilities of consumers and government, and save tax dollars. Quebec and Nova Scotia have both moved, although to a lesser degree than B.C., to impose obligations on beverage producers to be at least partly responsible for the effects of their packaging.

Many of the changes to beverage packaging programs, and other stewardship initiatives at the provincial level, are only recent developments, and the information regarding their performance is lacking at this time. However, it does suggest that some provinces are moving towards stewardship type operations and away from simple deposit-refund beverage container systems, as before. By shifting costs from the taxpayer to the product producer, and the product consumer, the programs are evolving as examples of stewardship (Environment Canada, 1997). It is important to note that simple deposit-refund programs are still the dominant initiative across Canada. The remaining provinces operate a mixture of instruments in order to achieve their goals. The following information in Table 5, summarizes the beverage container initiatives across Canada:

Table 5

BEVERAGE CONTAINER MANAGEMENT

IN CANADA

System in Place	*Province*
SALES BAN ON NON-REFILLABLES	Prince Edward Island
HALF BACK DEPOSITS (or % back deposit)	New Brunswick Nova Scotia Newfoundland Prince Edward Island
CONTAINER LEVY	Manitoba
DEPOSIT-REFUND	British Columbia Alberta Saskatchewan Quebec New Brunswick Nova Scotia Newfoundland Prince Edward Island
MANDATED REFILLABLES	Ontario
LANDFILL BAN	Nova Scotia

Manitoba is the only program which bases a multi-material recycling program on distributor paid levies on all beverage containers sold. This fund has allowed for recycling programs to be brought to the bulk of the population, with only a minority contribution from local taxpayers who are responsible for approximately 20% of the costs (more specific information on the Manitoba MPSP is discussed in Chapters 4 & 5). This contrasts with other provinces which operate container recycling or stewardship programs in general isolation of multi-material programs, and generally require greater sums of taxpayer dollars for program funding. This is changing, however, as is evident in the announcements made in Quebec, British Columbia, and Nova Scotia, where these more comprehensive

plans have been introduced to operate stewardship programs covering all packaging materials.

In order to promote optimization, some beverage companies have taken it upon themselves to introduce lighter, more durable packaging into the marketplace, or to promote other packaging reductions. International companies such as Coca-Cola, and PepsiCo have made their packages smaller, lighter and slimmer around the world, and saving money and material in the process (Stephenson, 1998). This kind of reduction effort is, at least partly, evident in the reductions achieved under the NAPP in the ICI sector. Packaging reductions are an important factor in reducing producer costs, especially relating to the transport of these containers before and after consumer use. While this in itself is beneficial, and promotes sustainability, most provinces do not yet impose any financial responsibility on these producers, so there is no savings in levy fees on their part, due to packaging reductions. All, but one, of the provinces which operates container deposit systems have imposed variable deposits, depending on container size. However, these deposits are currently paid by consumers, lessening the responsibility of industry to optimize their packaging, apart from that which meets their own financial needs.

In Ontario alone, the Blue Box system has saved the soft drink industry about $70 million annually, due to their limited contributions to the program, while taxpayers picked up the remaining tab for recycling service (Crittenden, 1997). The participation of industry may become more visible with the advent of comprehensive waste reduction efforts in some provinces, but progress on packaging stewardship across the country is still slow in coming. While industry is, and will be, contributing more in some provinces, notably B.C., Quebec, and

Nova Scotia, they are still removed from having direct responsibility of their packaging waste. While producers only pay a share of the program costs, since redemption rates are not 100%, these remaining moneys originating from consumers pockets are rolled back into program funds. In addition, half-back programs ensure that consumers pay the costs associated with containers, even if they are returned. Consumers are paying for their own recycling programs regardless of their location in Canada, and some appear to be paying more than others. The real, unanswered question appears to be: what are the costs being paid by the soft drink companies in Canada, and are they taking responsibility for their packaging?

3.5 International Programs Overview

While there are various programs for dealing with waste around the world, most research activities and measurement of program effectiveness has taken place in Europe and North America. This discussion will concentrate on these two regions, in order to illustrate how other countries have tackled stewardship initiatives. The stewardship programs from selected countries have been summarized, and assessed. This allows one to make comparisons, and to measure their relative achievements. Determining how effectively these initiatives achieve their goals, and how they measure up to each other is an important step in the evaluation of packaging stewardship.

There are many emerging terms such as Extended Producer Responsibility (EPR), Producer Responsibility (PR), Shared Product Responsibility (SPR), Chain Responsibility, or product stewardship, which are used when describing different

international programs. These terms may imply new ideas or better methods of achieving responsible conduct on behalf of industry or specific sectors within these larger collectives. In most cases it is not the term that is important but the achievement. In essence, each country or region has developed new terms but the goals are the same, in that producers become responsible, in whole or in part, for the products they deliver to the market, before and after the consumer has used it. While there may be differences in the actual programs, these terms denoting responsibility should not hide the real similarities from the reader.

Some nations have forgone stewardship initiatives to largely pursue recycling programs which, rather than dealing with waste before it is produced, chooses to manage it through re-use and recycling programs. These programs, as in the case of the United States and much of Canada, deal with waste issues mainly at the local level through municipal government funding. This is a key point, which must be acknowledged, in that the level of responsibility assumed by industry varies greatly around the world. There are different approaches to the funding required by stewardship or recycling programs. These are explored in the sections to follow.

Not all existing international stewardship programs have been focused upon for this research, as it is not the intent of this paper to cover the multitude of initiatives that may exist. These programs which have been analyzed and measured as to their performance, including their evolution and how they began, will be discussed in order to shed light on the MPSP, and in order to provide a comparison.

3.5.1 Role of Government / Legislation

There is a large array of instruments which various governments employ worldwide in order to prescribe some sort of responsibility to business with respect to packaging waste. It is difficult to fully discuss all of the various methods and array of programs in the limited space here, but examples will be taken from various locations. The availability of literature was a key factor in the decision making process for selecting programs to study here. The ability to access materials in English, and appropriate materials, limited the breadth of the study sites. Different countries have attempted to respond to the needs and attitudes in their respective jurisdictions, in the search for effective stewardship on behalf of industry, and proper waste management. It is clear that through these different approaches, some programs are more effective than others.

Governments have taken on new roles with the advent of agreements and other negotiated principles in order to undertake producer responsibility. For instance, the Dutch government has put a great deal of energy into programs which move beyond the typical command and control type of legislation which it considered to be largely ineffective (OECD, 1997 - 2), but which is common in other countries such as Canada and the United States. Germany has also taken to a more legislative and restrictive tack than the Dutch, with respect to packaging stewardship programs. The Dutch consider this type of self regulation not to be compromising in any way but to be more flexible and to allow for greater efficiencies and performance. It is not simply a voluntary initiative (OECD, 1997 - 2). The experience of other European countries, namely: Germany; France; and Belgium; have shown that wholly voluntary stewardship initiatives have been failures, and had to be promptly followed by government action in order to resolve

the problem (OECD, 1997 - 3). Experience demonstrated that government action was necessary when industry groups either failed to meet objectives, or simply disregarded the initiatives altogether. The looming threat of legislation is often effective as a tool for enacting effective programs (OECD, 1997 - 2).

This is not to say that industry groups cannot ever be effective in achieving results in positive initiatives within a vacuum of government control. In the United States, both Xerox and the manufacturers of nickel-cadmium rechargeable batteries, have developed take-back programs that are effective, and both were without government involvement (OECD, 1997 - 3). It is essential that governments reduce barriers to industry in forming industry action groups such as Producer Responsibility Organizations (PRO's), which are formed to administer and collectively act in stewardship initiatives.

While approaches may differ, implementing the concept of extended producer responsibility, requires at least some government intervention (OECD, 1997 - 3). This is an important theme to remember, because regardless of the country being focused upon, it appears that industry will be unable to fulfill the wishes of either the public or government in achieving full stewardship initiatives without assistance.

3.5.2 General Characteristics of International Initiatives

3.5.2.1 Germany

The system for reducing and managing packaging waste in Germany is the most extensive, mandatory legislation which exists in the world (OECD, 1997 - 1). It is therefore a very good example to study, and to base comparisons on for other emerging programs worldwide. The German Packaging Ordinance, in force as of June, 1991, under the German Waste Act of 1986, was the first legislation to introduce binding requirements for the recycling and recovery of sales packaging (OECD, 1996). Pressure was placed on the national government by the German states, to reduce waste due to dwindling landfill space and public opposition to an increasing reliance on waste incineration (OECD, 1997 - 1). The amount of material recycled each year would increase under a fixed increment, and by placing joint responsibility with the producers and distributors of the materials for the proper management of the material in the system, and ensuring compliance (OECD, 1997 - 1). The goals of the German Packaging Ordinance are as follows (OECD, 1997 - 1):

- Packaging is to be produced from materials that are environmentally acceptable and do not hinder recycling;
- Waste from packaging is to be avoided in that packaging:
  - be reduced to that volume and weight necessary to protect the contents and to market the product;
  - be so produced as to be refillable insofar as it is technically possible and feasible; and
  - be recycled when refill is not possible.

It is important to note that this program is national in scope, covering all 16 German states (which are individually responsible for program implementation, reporting, and compliance), in contrast to the voluntary Canadian system which lacks a Federal presence to ensure mandated requirements are put in place to manage waste. The German program's primary purpose in reducing waste is to assign Extended Producer Responsibility (EPR), which provides incentives to producers to redesign products to make them more environmentally sound (OECD, 1997 - 1). Industry became part of the packaging waste program through a choice of options which was offered by the German government, whereby industry could ultimately reach a recycling rate of 80%, or comply with a 30-cent per package surcharge on all of their packages (Hawken, 1993). German industry chose the former option.

The German Packaging Ordinance was implemented across the country in three stages as follows (OECD, 1997 - 1):

1. Effective December 1, 1991 - all ***transport packaging*** to be taken back by manufacturers and distributors, including barrels, canisters, sacks, and pallets.
2. Effective April 1, 1992 - all ***secondary packaging*** must be taken back by distributors at point of sale, including blister packs, advertising, decoration.
3. Effective January 1, 1993 - all ***sales packaging*** must be taken back by distributor.

In order to facilitate the efficient management of the program, an option was presented to individual industries to form a Producer Responsibility Organization (PRO), which would manage the prescribed materials on behalf of

each individual producer. This has lead to the formation of the Duales System Deutschland (DSD), as the PRO set up by about 600 German companies in order to meet the requirements of the mandated reduction and reuse of packaging spelled out in the legislation (OECD, 1997 - 1). The program is also known as the Green Dot System since green dots are placed on all packaging managed by the PRO, acting as a license symbol for all those materials participating in the collection system of DSD (OECD, 1997 - 1). Municipal and private collection systems are the responsible parties collecting and sorting returned post consumer packaging at the local level. These parties sign "waste disposal contracts" with the DSD in order to receive funding for their efforts (OECD, 1997 - 3).

Producers pay a fee to the PRO in order to place the green dot on their products, ranging from one cent to two dollars, on the guarantee they will ensure the package is recycled or reused in some manner (Hawken, 1993). This fee schedule is based upon volumes of packaging material the specific industry is responsible for, in addition to a charge for volume and area of packaging (OECD, 1997 - 3). Producers and distributors are the responsible parties within the PRO, and the retailers (distributors) are mandated to take back packaging at the point of sale to ensure the removal of the waste from the public disposal system (OECD, 1997 - 1). All other management of the packaging waste past the take-back provisions is a joint responsibility between the two parties in the PRO. Important in the German experience is the fact that industry was given the latitude and almost "complete freedom" to develop their own system to efficiently collect and sort their products as they wished in order to meet the targets set by government (OECD, 1997 - 3).

Targets exist for the collection, sorting, and recycling of a minimum amount of specified materials as follows:

- A minimum 80% of all packaging material must be "collected"
- A range of 80-90% of this packaging material must then be "sorted"
- A range of 60-70% of this packaging material must then be "recycled" (as a matter of principle all collected and sorted material is to be recycled)

The recycling targets noted above were to be met by July, 1998, in an amendment which saw a slight easing of the quotas from the original targets. Apart from these clear targets are the stipulation that reusable beverage containers shall not drop below 72% market share, in order to protect the continuance of the systems in place for re-using these containers.

This German system has seen criticism as being too extensive and expensive to operate. According to Stephenson (1998), the very complex scheme devised in Germany is not necessary since reduction in waste is the outcome of better product design and source reduction taking place in the packaging industry worldwide, not just in Germany. The only difference is that Germany has coincidentally forced extra and burdensome costs on producers and distributors to manage these materials. Stephenson (1998) argues Germany has arrived at the same percentage of overall waste diverted to recycling as the United States, Canada, and other European countries, at about 15%. This argument does not explain, however, that the success of the German policies of reduction of packaging, and material re-use, would not be included or measured in the recycling rate of MSW. Not taking into account this important difference between waste recycled, and waste diverted from the stream altogether, misses the main function of the role of the German Packaging Ordinance.

A largely unanticipated benefit of the German Packaging Ordinance has been the development of secondary industries and new technologies by industry in order to meet the goals of the legislation. New, efficient methods of processing and re manufacturing of materials has taken place due to the recycling quotas in place. This has spawned the development of thousands of jobs, new processing techniques, which are less wasteful, and more environmentally benign (OECD, 1997 - 1). New methods of steel production using recovered plastics, and other industrial developments have been the result of German industry taking the initiative under the program's goals to find new ways of doing things. The German automobile manufacturer, BMW, has developed a new process of manufacturing vehicles which will promote nearly 100% reusability of all components (Hawken, 1993). This is especially important after the life of the entire vehicle has ended, since parts can be removed and re-used in another vehicle. According to Hawken (1993) this is a direct and obvious result of the removal of the incentives present in the past which promoted wasteful production. Only when the risks and costs of a product far outweigh the gains and profits enjoyed by a manufacturer will scientists, designers, and investors turn to developing safer alternatives (Hawken, 1993). The ordinance is believed to be the catalyst of these positive developments.

Recycling may be important but it is not as effective as waste reduction initiatives in achieving success in a broad stewardship program (OECD, 1997 - 1). One further point to note is that Americans and Canadians are many times more wasteful than Germany, and produce more than double the garbage per person (Hawken, 1993). This leads one to believe that, apart from the specific program in place, it may be much easier for North Americans to achieve the same recycling rate as the Germans, since they have so many options available at their disposal,

that have yet to be harnessed. Being so wasteful, ironically, has its advantages, and this may allow for a large initial reduction in garbage produced, simply because they already produce so much, and can achieve reductions by relatively simple measures.

There is a significant difference between the current regulatory climate in European countries and those in North America. This may go a long way in explaining how programs such as the Green Dot Program are accepted by the public in Germany. Factors in Germany, including lack of space for landfills or dwindling natural resources (Hawken, 1993), obviously have played a part in the development of the DSD. Environmental taxes and other costs on many products are significantly higher in Germany, as gasoline taxes are nearly eight times what they are in Canada and the United States, and tipping fees ten times greater (Hawken, 1993). It is important to point out that the unique cultures and environment in which these stewardship programs are fostered often plays a significant role in their development. As different as the countries may be, these programs are still a valuable tool as the main goals are still the same; reduction of waste and producer responsibility. The Green Dot Program cannot simply be airlifted to another country and implemented as is, but its concepts and principles must surely be valuable as a starting point for stewardship initiatives in other jurisdictions.

3.5.2.2 The Netherlands

While the German stewardship program discussed above is a mandatory initiative, the Dutch Packaging Covenant is a contrast to it, being a negotiated

agreement between government and industry. The Dutch program came into effect on June 6, 1991, and while it is "voluntary" for industry to ascribe to the covenant, unlike the German program, they must abide legally by the conditions once they have done so (OECD, 1997 - 2). The goals for the program have been negotiated between industry groups represented through the Foundation on Packaging and the Environment (FPE), and government. They are enforceable under civil law rather than through government legislation as is the case in Germany. The Dutch have developed the concept of "Chain Responsibility" to allow for the sharing of responsibility for packaging waste and management (OECD, 1997 - 2). The chain involves packaging manufacturers, food producers, and the government who all share equally in the responsibilities associated with properly managing packaging waste. The specific goals of the covenant which are to be reached by the year 2000 are (OECD, 1997 - 2):

- to reduce the total amount of packaging to 1986 levels and, if possible, strive for an additional 10% reduction; and
- to promote reusable packaging, with a target of 60% recycling of disposable packaging, and prohibit packaging disposal in landfills.

The Dutch government, however, has maintained the right to enact legislation if a large number of companies do not sign on to the covenant, thus keeping a tool to ensure a base level of performance and producer responsibility is attained (OECD, 1997 - 2). Therefore, while the voluntary concept is preferable to the Dutch, they have also realized that there must be adequate measures in place to ensure some basic minimum of compliance on behalf of industry and any collectives they have formed to represent them. Through the National Environmental Policy Plan introduced in Holland in 1989, other types of voluntary

agreements have been reached to advance environmental policy objectives, apart from reducing packaging waste (OECD, 1997 - 2).

While the Dutch Packaging Covenant is based upon a covenant reached under private or civil law, as mentioned above, it is a controversial approach. There have been problems with the early stages of the program, as the total amounts of packaging waste in circulation had actually increased between 1986 and 1992 in the Netherlands, even though recycling of packaging materials had increased 25% during that same period. However, between 1992 and 1994 the total amounts of packaging in circulation actually decreased by approximately 16%. In fact, the 1994 goals for the program were largely achieved except for plastic packaging, which has steadily increased in amount, since the covenants programs inception (OECD, 1997 - 2).

There have been two main arguments identified against using covenants as a policy strategy, which can also apply to other countries, not simply the Netherlands (OECD, 1997 - 2):

1. they are not subject to public control, and third parties largely excluded; and
2. "free rider" problem exists without regulatory measures that are necessary as a looming threat to ensure compliance.

Having said this, there are also two major arguments put forward as favouring a covenant approach, also applicable to other jurisdictions, which are (OECD, 1997 - 2):

1. through interaction and debate, there is a great amount of creative and efficient solutions generated in an absence of command and control laws; and
2. there is less conflict through this interactive process searching for innovative solutions, and less chance of unequal costs or effects borne by one or more stakeholder(s).

The monitoring requirements of the covenant are the responsibility of the producer organization, the FPE, and the member businesses which form it. The member businesses submit their data regarding packaging and other targetted materials produced, which in turn are provided to the producer organization. The FPE provides annual action reports which are in turn delivered to the committee which oversees the process under the covenant agreement. This independent committee is called the Committee on Packaging and the Environment (CPE) whose membership of five people is shared among government and business representatives who jointly appoint a chairman (OECD, 1997 - 2). While monitoring is the role of the FPE, the compliance of the covenant is the responsibility of the CPE, producing reports and providing feedback to industry. This allows them to gauge the effectiveness of measures taken to reduce or better manage the respective materials. Packaging waste and new packaging, either entering or leaving the domestic market, are both considered under the covenant and measured as to their progress. Accurate data have proven difficult to obtain and measure for the early periods of the program from 1986-1995 (OECD, 1997 - 2).

Inherent in the covenants foundation is the employment of three important elements, which are (OECD, 1997 - 2):

1. ***Chain Responsibility*** - responsibility shared among actors in product chain, so that no one actor is responsible solely for modifications, or the costs borne by adaptations for product manufacture and management.

2. ***Life-Cycle Analysis*** - all environmental effects of a products production and consumption over its life are assessed encompassing manufacturing, use and disposal.

3. ***Market Economic Analysis*** - alternatives resulting from Life-Cycle Analysis are measured as to their economic effects on different actors of the chain, and production modified so as to best manage waste costs effectively. This instrument allows for aspects such as costs of packaging collection and handling, recyclability, energy recoverability, and tying these costs to the potential effect on jobs.

These elements or, more accurately, instruments are correlated and used in conjunction with one another in order for them to be effective at providing a measure of product stewardship. These results obtained through this process are ultimately condensed into another consultative process whereby different groups of experts, and process stakeholders review the information in project groups. Ultimately, a steering group reviews the proceedings and conclusions derived from the smaller project groups, in order to make a final decision on alternatives for production and management of packaging and packaging wastes in the country (OECD, 1997 - 2).

The program has resulted in innovations in packaging designs, and there are claims that significant savings have been achieved in materials and energy used for packaging, however, data on these benefits appears not to be available, and non-governmental agencies have seen results to date as largely unsatisfactory (OECD, 1997 - 2). Certain drawbacks emerged such as the exclusion of consumer groups from the process, and consumers not benefiting from any savings realized by the producers and distributors from packaging cost reductions, as store shelf prices were static (OECD, 1997 - 2). This exclusion of the consumers from the planning and the benefits associated with the covenant would appear to be a significant shortcoming as consumers acceptance and participation would seem a critical element in the desired "chain" of responsibility which is set up through the Dutch program. Other elements which need to be remedied in the future according to the OECD (1997 - 2), are the lack of international perspective on packaging reductions, free-riders which have not signed on to the covenant since it is still an optional program, and the lack of correlation with other Dutch environmental policy instruments. With regards to the free-rider problem, this is inherent in a covenant or optional program, which is more effectively avoided in mandatory programs as that which operates in Germany through DSD. Free-riders are still persistent even in Germany, however.

The major elements that have been achieved through the covenant and which can be learned from in order to develop and improve other stewardship initiatives are (OECD, 1997 - 2):

- involvement of main players in the product chain;
- coupling of product and waste policies;

- establishment of a monitoring system; and
- using planning instruments (Life-Cycle Analysis and Market Economic Analysis) to achieve waste prevention and packaging re-use.

There is some work being dedicated by the Netherlands government towards laws making the program less of a covenant and more of a mandatory program. This legislation would be aimed at controlling some of the nagging negative effects including industries not willing to sign on to the covenant, and including more products (OECD, 1997 - 3).

A criticism of the Dutch approach has been the voluntary and flexible nature of the program, and the fact that it is based under private law, avoiding the scrutiny of the public, and allowing for free riders (RCBC, 1998). Local governments have and will continue to finance local waste management, as industry is not responsible for these costs. It is unknown if this situation will continue. However, the flexible nature of the covenant has also been critical to its success, by allowing industry to choose the most efficient and effective means of achieving reductions (OECD, 1997 - 2). The results indicate that the covenant generated hundreds of technologically innovative adaptations, in lighter, stronger, and smaller packages. Many packages were also able to be re-used (OECD, 1997 - 3). In order to eliminate free riders in the future, all industry not signed to the covenant may have to meet the obligatory goals of the EU Directive on Packaging Waste, in order to level the playing field (RCBC, 1998).

3.5.2.3 The United States

In the United States of America, stewardship is not a common term used to describe the array and wide variety of often confusing and competing programs which exist across the nation. While programs in some regions can be considered as progressive and effective, they would not be considered examples of packaging stewardship. For the most part recycling is the common thread. In Europe there is an emphasis on reduction and reuse, while the United States emphasizes recycling (OECD, 1996). In the end, it does not matter what it is called as long as it is effective, however, the country that is the world's largest consumer market is proud of the fact that they have brought "consumerism" to the world. This wasteful legacy is evident in their policies and laws (Young, 1991). Through the void of Federal legislation and the general lack of state partnerships, it appears that American governments are content to follow the lead of industry in packaging issues.

In the United States, government intervention into solid waste and recycling has been a volatile issue, since the first bottle bill was passed in Oregon in 1971, which required retailers to collect bottles and provide deposit refunds to consumers (Strong, 1997). While bottlers had provided these services (entirely for their own benefit, and in order to be efficient) for the better part of the century (Crittenden, 1997), this legislation was important because it set in place as law a common business practice of the time, in order for the public good. This type of deposit-refund legislation is popular with consumers but not with industry. Too often it is perceived as a threat to their bottom line (Strong, 1997).

The Federal government passed the responsibility for waste management to the state authorities in 1976 through the Resource Conservation and Recovery Act, but does retain some powers through the Office of Solid Waste within the U.S. Environmental Protection Association (EPA). The function of the office is to help foster change and develop better management practices at the individual state level (Strong, 1997).

In fact, the EPA set for 1992 a national recycling goal of 25% (Stilwell et al, 1991), which appears not to have been reached in many states, since 29 U.S. states had not even achieved a 20% recycling rate by 1996 (Strong, 1997). This is not to say that there has been no progress in some states, or regions. Much of the U.S. has participated in programs such as yard waste bans in landfills, public composting programs, and seven states have recycled content mandated by law for certain materials (mostly for newsprint). California has advanced recycling issues the most, and has pursued recycled content laws for more products (newsprint, trash bags, and glass bottles) than any other state (Strong, 1997). Some American cities, including Seattle, have achieved remarkable source reduction rates well beyond other cities (40% by 1991), due to the lack of options available for dealing with the waste. But, this has inadvertently created great cost savings for taxpayers (Young, 1991). The theme in the United States, though, has been localized and sparse source reduction of waste, and a genuine lack of centralized or standardized planning for further reductions. One of the only initiatives to cross state boundaries is the Council of Northeastern Governors proposal for packaging which strived to develop packaging waste reductions from a base year of 1988 (OECD, 1996). An ultimate reduction target of 35% reduction by the year 2000 is the goal, but allows for any combination of recycled content, reuse, source

reduction, or recycling as the company prefers (OECD, 1996). There is no evidence that this proposal has advanced to the implementation stage.

Many states have opted for similar MSW reduction goals as those desired in Canada, however, they appear to be much less ambitious in most cases. While some states such as Rhode Island have an unspecified goal of 70%, or 60% reduction planned for New Jersey, most regions of the country are striving to meet targets of between 25% and 50% for the year 2000 (Strong, 1997). Due to the fact their base years vary, it will be difficult to track the progress achieved or make standard comparisons between other states or between countries. Source reduction appears not to be emerging as a more popular alternative in the United States, as the past focus had always been on recycling to achieve waste reduction (Strong, 1997). This was the case, even though the EPA had long ago mandated waste reduction as the primary goal for proper waste management practices (Stilwell et al, 1991).

Marketing decisions, in many instances, appears to be taking precedence over sound environmental decision making. Such is the case regarding non-reusable imported green beer bottles. These bottles have been increasing their market share in the U.S., causing large price declines in the amount paid for green cullet, forcing increasing difficulties for those attempting to recycle the material (Fenton, 1993). In several U.S. cities Miller Brewing is test marketing beer in plastic bottles in hopes of mirroring a very mobile oriented American society (Kesterton, 1998). If this trend becomes popular it may further endanger the once-common bottling of beer into glass bottles, and present more problems for the management of the ever increasing amount of plastic containers which make up the waste stream in the U.S..

Packaging waste in the United States makes up approximately 32% of the MSW stream (Young, 1991). While this would be a logical place to employ stewardship initiatives, refillable beverage containers have steadily decreased in their usage (Young, 1991), and the laws for PET (mostly made up of plastic pop bottles) recycling have been repealed across the U.S., as prices have stumbled to all time lows. Refillable containers are being used with success in some local markets, even in the void of any laws requiring them. Companies that offer beverages in refillable deposit-return containers that are different from the big two brands, Coca-Cola and Pepsi, have competed well. It is estimated that they would actually be able to compete directly with the large soft-drink companies if an unsubsidized level playing field existed (Crittenden, 1997).

One of the main stumbling blocks in the United States towards the further development of effective programs to reduce waste through source reduction initiatives and re-use, is the lack of a strong federal presence in the issue. Many states have acted on their own behalf, often without the cooperation of other states. This has caused for a large discrepancy to occur in the recycling and waste management programs and services, practiced from state to state. This has caused confusion amongst the public. Large metropolitan areas, which may border on two or three states, with potentially different policies, have heightened this confusion. The United States may be a good example of a country which could benefit greatly from a more national approach to waste reduction and recycling, as is Canada. Nonetheless, there has been achievements. Several states including Massachusetts, New York, Oregon, and Michigan are looking to expand their current deposit-refund legislation, and this may encourage further refillable development, and set an example for others to follow (Strong, 1997).

The United States has relied on municipal recycling, and incineration, as well as composting to a lesser degree in their struggles to lessen reliance on landfills (Baarschers, 1996). Some states have recycled content laws for products such as newsprint, and other states are exploring options. America, however, is reflective of end-of-pipe solutions to waste reduction. There is no real indication that stewardship will be a national initiative, and taxpayers will likely continue to fund recycling programs as a means for dealing with packaging products and packaging waste in the United States.

3.5.2.4 Japan

The Japanese "Packaging Recycling Law" is a national program enacted in 1995. It is still in its infancy, and many of the facets of the program will not actually evolve until the year 2000. Therefore while in the course of being implemented, there are limited results available to learn from. It intends to promote the separate collection and recycling of waste containers and packaging, aiming to achieve a waste volume reduction and effective utilization of recycled resources (OECD, 1997 - 3). By the year 2000, there will be obligations for industry to become stewards of glass bottles, all plastic and paper based packaging and PET containers (OECD, 1997 - 3). Municipalities are responsible for submitting and having their collection programs approved by the national ministries. Municipalities are also physically and financially responsible for both collection and separation of all assigned materials. It appears that these governments are also responsible for the breadth and scope of their programs on a

local level, but that industry must recycle or at least valorize all collected packaging.

The recycling of this collected material is the sole responsibility of industry, as defined by those who are responsible for filling packaging materials with product, as well as those responsible for manufacturing the container and packaging material itself. There are some limitations on the responsibility that packaging manufacturers (as opposed to containers) actually possess, but government apparently reserves the right to assign further materials to businesses (OECD, 1997 - 3).

As is the case in many other international programs, a PRO has been established under the Japanese legislation, and has been assigned responsibility to collect, manage, and record data with regards to the responsibilities of the individual industries involved. Quotas are still being developed at this time, as are potential punitive actions or penalties assigned to industries failing to meet their responsibilities. These penalties are being finalized, but appear to be quite small, on the order of only a few thousand dollars or less for industries in which it has been proven have not met their obligations (OECD, 1997 - 3). On a national scale, for large companies this would not appear to be a deterrent, as the costs of recycling the collected materials would far exceed any penalty. As was said earlier, this initiative is in its infancy and data or results are not yet available, but it does provide insight as to the structure and scope of a developing stewardship program outside of North America and the European Community.

3.5.2.5 France

The French program has established a goal of 75% recovery/reuse/recycling (including incineration and composting) to be achieved by the year 2002 (OECD, 1997 - 3). Control of the packaging stewardship program lies with the federal government, through legislation, which came into effect in 1993. The emphasis of the program lies with a restriction on landfilling (including application of a progressive landfill tax) to cover only "ultimate residues", for which no further treatment is available (Environment Canada, 1997; OECD, 1997 - 3). The Household Packaging Waste Decree emphasizes producer responsibility for the packaging waste, and allows for three management options to be available to industry, which are (Environment Canada, 1997; OECD, 1997 - 3):

1. use of a deposit-return system;
2. establishment of an individual recovery (collection and sorting) system; and
3. joining a PRO to collect and sort material.

As in other countries such as Germany, a PRO was formed in France, entitled Eco-Emballages, to organize the recovery of household packaging waste. A "green dot" logo is placed on member industry products, amounting to 91% of all packaging sold (OECD, 1997 - 3). The few companies not taking part in the program are individually responsible for their own products and their recovery. The program utilizes the existing system of retrieval across the country and provides funds to local governments to carry out collection and sorting (OECD, 1996). Eco-Emballages also sets up contracts with companies to reprocess the collected materials on behalf of its members.

Funding for the program is met through two processes, apart from landfill taxes which also contribute to waste reduction programs. The first is the collection of fees from volume based packaging such as beverage containers, depending on their volume. The second process is the assessment on other types of packaging based on the weight of their predominant material (OECD, 1997 - 3). These funds are then delivered to local governments based on tonnage of material collected and sorted. These governments can then manage their individual programs, and recover the "green dot" materials from consumers. Eco-Emballages must report all funds collected and provide through their licensing agreement and provide balance sheets and a budget to a committee which oversees all PRO operations. The committee is made up of local and federal government representatives, and numerous business interests (OECD, 1997 - 3).

The fees paid by industry are rolled into the price of the particular products offered for sale across the country and no separate assessments or levies are paid by the consumer. Of course, the consumers will pay for the management of the product since industry will inevitably ensure that it recovers all costs associated with managing and recovering packaging sold. In France, essentially, recycling costs are shared among producers, and local communities.

A separate PRO has been formed in France entitled Adelphe, which was an agreement between the manufacturers and bottlers of wine and spirits, to collect and recycle their glass packaging. The two PRO's cooperate in their activities in a non-contractual agreement. Bottle banks are to be provided for every 600 residents to drop their products (OECD, 1997 - 3).

3.5.3 The European Union

One major influence on packaging stewardship programs in Europe which must be mentioned, is the European Union (E.U.). The proclamation creating the community is basically a trade agreement which provides Europe with a single currency and tariff-free trading on most products and services between most European countries. The importance of the E.U. is that individual countries cannot restrict trade of other countries goods through penalties or taxes that are considered unfair or restrictive. For instance, in Germany a proposal to set minimum refill quotas on beverage containers failed in 1989 due to E.U. intervention. It was claimed that beverage companies were being unfairly singled out and that any benefits would be not worth the burden imposed artificially by the government on industry (Ryan, 1993). This happened despite the great influence carried by Germany within the E.U.. As the largest economy, however, it is believed that future sanctions against the current German refillable program are unlikely to occur (Ryan, 1993).

In fact, the E.U. is responsible for setting recovery and recycling targets for members within the community to achieve by 2001. It is the responsibility of individual members to accomplish these tasks by the means they desire, or else they can garner stiff fines. The E.U. Directive on Packaging and Packaging Waste is a mandatory directive which sets the minimum standards for all members. The goal proclaims 50-65% of all packaging material by weight must be recovered or "valorized", with the amount recycled between 25% and 45% of the total (Fenton & Sinclair, 1996 - 1). All members must report their progress on their achievements (OECD, 1996). There is no mandated requirement to incorporate extended producer responsibility within the independent countries, thus allowing

the members to achieve targets at their own means (OECD, 1996). There are certain restrictions on countries which wish to go beyond the targets of the E.U., so as not to disturb markets or unduly affect or penalize certain industries, and not others (OECD, 1996).

The E.U. has had a direct effect on Stewardship programs being developed in Europe (Ryan, 1993). It has allowed countries such as Germany to still be far ahead of the rest of the world in developing a comprehensive stewardship initiative. However, trade agreements such as N.A.F.T.A., and the European agreement can be a negative influence if they wish to promote unencumbered markets over recovery and recycling initiatives, and producer responsibility. Current world markets simply do not reflect the actual costs of the products that are traded within them, and industry perpetuates this problem (Hawken, 1993). Internalizing all costs should be the goal of markets and our entire planet, but at present modern trade agreements are mere tools for large corporations to improve their trade (Hawken, 1993).

There have been similarities drawn between the E.U. Directive on Packaging Waste and the NAPP in Canada. They are both agreements which are intended to reduce and divert packaging material from the waste stream (Fenton & Sinclair, 1996 - 1). However, the NAPP is only a policy document which is voluntary, and not a binding piece of legislation as in the packaging directive (RCBC, 1998). In addition, the NAPP does not champion the principle of polluter pay, or ensure a level playing field by eliminating free-riders. The E.U. Directive is a more thorough and demanding means of dealing with waste reduction than is the NAPP (Fenton & Sinclair, 1996 - 1).

3.6 Funding Mechanisms

It is thought that the most fundamental issue under Extended Producer Responsibility is the matter of financing (OECD, 1997 - 3). This would seem to relate to any other stewardship initiatives as well, since the ultimate goal is basically the same - prescribing responsibility to industry for the waste associated with its products. The differentiation must be noted here that this matter of cost is not the designation of the entity which physically manages the packaging material or sets the rules, but who actually pays for the costs associated with the program operations (OECD, 1997 - 3).

Since not all costs are always clear depending upon the program being studied, it is not possible to determine exact shares and how they are apportioned, but they can be approximated in most cases. Costs vary greatly depending on the nature of the packaging initiative, as the scope and range of the materials and goals are so different for each international program in operation. The level of internalization that industry is required to accomplish is important as it approximates responsibility not in a full monetary sense, but allows for an easier comparison between countries and the general level of responsibility assigned to packaging producers.

An example of a program, which assigns full costs to producers thereby encompassing the most thorough stewardship of all packaging materials, is that in Germany. By being responsible for packaging in the post consumer stage, the PRO set up by German industry becomes responsible for all costs related to the materials, since they are managed independently from the municipal waste system

(OECD, 1997 - 3). This, in theory, is a simple means of assigning the costs to industry. How these costs are internalized into product design, reducing waste, and other efficiencies is the responsibility of industry. It also may mean full costs are passed on to the consumer buying the products. This is a positive measure in that it allows for price to reflect the full cost of a product, and sends proper signals to the market when costs are fully internalized (Hawken, 1993).

Less ambitious programs are evident in many jurisdictions where it is largely the financial responsibility of a municipal authority to collect and sort materials, and these materials are then passed on to an industry group or PRO for further processing (OECD, 1997 - 3). Costs associated with all aspects past this collection and processing point are borne by industry, and this may mean meeting specific targets for recycling reduction or reuse depending on the country. This is the case in France, Belgium, Japan, and other jurisdictions including Italy, Greece, Portugal, and Spain (OECD, 1997 - 3).

The Netherlands assigns no direct costs to industry and their PRO, but they nonetheless must ensure certain packaging stewardship goals are met, and they therefore have a stake in their efficient and economic management (OECD, 1997 - 3). The local levels of government are responsible for costs associated with all aspects of management. Even though industry has to play an active role managing packaging properly through EPR through the covenant program, this lack of accounting of costs and internalization is not evident (OECD, 1997 - 3), as it is in Germany. The Netherlands and Germany have both been able to more clearly identify costs of dealing with packaging waste through extensive life-cycle analysis research.

Apart from stewardship programs, an example of another different kind of financial responsibility towards the management of recycling initiatives is that in the Province of Ontario. Industry has formed an agreement with the province for financial contributions but this has failed to actually cover the costs of the program being borne by the taxpayers of Ontario, which loses many millions of dollars annually (Crittenden, 1997). Full responsibility is assigned towards municipalities for costs for collection, sorting, and managing post consumer waste materials. While this is obviously not a stewardship or EPR type of program it helps to demonstrate the wide range of means of dealing with packaging materials that are in existence globally. With regards to municipal recycling programs, the lack of a direct relationship between industry and the products it places in the market, causes confusion regarding funding and financial responsibilities. Germany has eliminated any confusion in this matter by assigning all costs and responsibilities directly to industry.

Some Canadian provinces do require industry funding for handling returned beverage containers, but their actual contributions are not clear since some consumer deposit funds top up this amount. Also, subsidies for depot operations, and other taxpayer funds are hidden into many provincial operations. Stewardship board operations often do not have powers of designating funding or deposit levels, and levy distribution. This has left funding decisions in the hands of the provincial governments, who are often wary to prescribe direct costs to industry for the management of their packaging in the waste stream.

Apart from the financial costs borne by industry directly for managing the products past the point of consumer use, there are other tools available to governments who feel that financial contributions or responsibility may be lacking.

Using methods such as applying taxes on certain difficult and potentially costly to manage products such as beverage containers is another means of funding program costs directly or indirectly (OECD, 1997 - 3). This measure, or the threat of it, could be used in instances where there appears to be a gap in responsibility taken on by industry and the full costs of managing a product.

3.7 Summary of Stewardship Programs

Packaging waste is a difficult and troublesome product to deal with due to the complex mix of materials which make it up, and the typically high volumes in which it is disposed. Despite this challenge, changes are taking place which have put the onus on producers to be more responsible for these packaging materials and their design (RCBC, 1998). The analysis of international initiatives displays that formal stewardship programs have really only been in operation for a decade or less. This is an important factor because many of the specific program results and material waste reduction trends are not yet evident in many countries. Some countries, and most specifically Germany, appear further down the stewardship road than most, they have taken formal steps through legislation to enact change which has allowed other countries to watch and learn from their program. Some countries resource status and economic realities have forced them to educate and "train" their citizens to become more responsible with all resources, as opposed to relatively wasteful North Americans (Hawken, 1993). This is another significant factor when reviewing results entailing how successful stewardship programs have been at achieving results and consumer participation rates.

North Americans have relatively more lifestyle changes to make as compared to Europeans, in order to achieve the same basic levels of reduction, reuse and recycling in their lives, regardless of any formal programs in place. North Americans are more than twice as wasteful as Northern Europeans, but the costs of dealing with this waste is much less in North America (Ryan, 1993). Apart from any environmental concerns, it is out of economic necessity that Europeans are less wasteful by comparison. Necessity also spawned programs instilling the "polluter pays principle" which have been developed in Europe to assign costs and responsibility for wasteful practices (Ryan, 1993). The realization that manufacturers not only sell products, but also the packaging associated with those products appears to be an important step in the development of stewardship principles.

While Germany and the Netherlands operated programs from much different perspectives, one being optional and the other being mandatory, it appears that their stated results have been largely similar. Although the goals and reporting format are more modest in the Netherlands. The biggest changes which they seem to have instilled is the imposition of a new method for modifying manufacturing practices, and changing corporate attitudes. This is an important element which may not be seen immediately in quantifiable results, but will surely encourage packaging reductions in the future, as industry finds better means of producing and packaging goods. It is also valuable to implement a protocol for dealing with and implementing stewardship practices. In both countries there are committees and responsible parties for reviewing and overseeing change. These new and better methods of packaging are visible in modern industry practices.

It is the experience that entirely voluntary packaging stewardship programs have not worked well at achieving desired reductions in waste and assigning proper levels of responsibility to producers (OECD, 1997 - 3). While not the rule, it has been common for programs to become mandatory through legislation, such as the case in Germany, France, and Belgium. In these countries voluntary initiatives were inconsequential at reducing the reliance on landfilling, and increasing recycling and reuse (OECD, 1997 - 3). The downfall of the voluntary programs appears to be the lack of full participation by industry, or in other words, the "free rider" problem.

Producers passing on higher prices to consumers due to the management costs associated with stewardship programs are a positive development according to Hawken (1993). Consumers will receive signals that actually reflect the cost of the product, and management of the container that it is sold in. What is ultimately the goal for all parties involved, namely: industry; consumers; and government, are that better and more efficient packaging will be developed out of necessity. Higher costs offered to consumers could slow sales in the short term but will force industry to innovate and eventually reduce prices as packaging volumes decrease (Hawken, 1993). This will lower costs in the end, and provide greater efficiencies for all involved.

Through stewardship initiatives, Germany has succeeded in greatly reducing the amount of packaging in circulation in the country on the order of one million tonnes from 1991-1993 (OECD, 1996). Further packaging reductions amounting to approximately 66% by weight of all packaging materials occurred between 1993 and 1995. This is in addition to increasing the circulation of reusable beverage containers a further 2.5% to a total of 74.5%, and greatly

decreasing the amounts of transport packaging in circulation (OECD, 1996). In fact, in meeting all necessary targets and actually surpassing them in some instances, new problems were created with the need to export some of the collected material for processing. The desired results of shifting to more environmentally desirable packaging, and less of it, are being realized. Germany has influenced all of Europe with the fundamental shift in waste management and stewardship (OECD, 1997 - 3). The Netherlands also achieved reductions in the amount of packaging materials in circulation, on the order of 10% by weight (OECD, 1997 - 3).

3.7.1 Elements of Stewardship

Fenton & Sinclair (1996 - 1) have identified essential elements of packaging stewardship policy. To ensure that industry takes a leadership role in reducing the waste associated with packaging, government policy is necessary to promote and enhance stewardship (Fenton & Sinclair, 1996 - 1). The obligation for industry to reduce the impact of packaging and packaging waste must be complemented with contractual agreements specifying binding performance standards. There are three essential elements required of government policy, in order to achieve this obligation on behalf of industry. These elements are:

1. take back obligations;
2. waste prevention obligations; and
3. life-cycle analysis reporting obligations.

Like Fenton & Sinclair (1996 - 1), a study performed by the OECD (1997 - 2) has distilled the constituents of the Dutch Packaging Covenant into what can be deemed important elements of packaging stewardship. These four basic elements are considered useful tools for other countries to learn from and adopt when feasible and appropriate. These elements acknowledged and stated by the OECD (1997 - 2) are:

1. involvement of the main players in the product chain;
2. coupling of product and waste policies;
3. establishment of a monitoring system; and
4. using planning instruments (Life-Cycle Analysis and Market Economic Analysis), and quantitative goals to achieve waste prevention and packaging re-use.

5. *increased consumer, and consumer organisation, involvement and engagement with the stewardship activities and goals;*
6. *better monitoring of international movements of packaging waste; and*
7. *improved interaction between stewardship initiative and other environmental policy instruments.*

In addition to the first four elements above, the OECD also recognized the need for further improvements to the Dutch covenant which, if acted upon, would make it a much more effective stewardship program. These latter three improvements (in italics) can and should be applied to other stewardship initiatives, and learned from.

The act of synthesizing broad, and often complicated packaging stewardship initiatives into basic elements is important to allow for these programs to be compared and evaluated. While Fenton & Sinclair (1996 - 1) looked at numerous initiatives and discuss the obligations which must be put onto industry to ensure that general stewardship principles are met, the OECD (1997 -2) has looked specifically at one program and drawn out more specific elements in their overall evaluation of that single program.

There is a great deal of value for Manitobans, and Canadians, to look abroad to some of the results being achieved in countries like Germany through stewardship initiatives. For the most part, Europeans have moved far beyond the initiatives here in Canada. Helpful in achieving stewardship in Europe, has been the European Directive on Packaging and Packaging Waste, which threatens penalties for non-achievement of obligations. No such mandatory framework exists in Canada. There are many dissimilarities in our circumstances, but we can still learn from their experiences, both positive and negative. Elements of packaging stewardship have been developed which can be used as a guide in developing and refining programs which are less sophisticated. Some of the necessities of reducing waste in Europe, due to a real lack of landfill space and sparse resources, are not as evident here in Canada. Measures were taken largely because land space is limited, and valuable. Time was critical. While there is more time in Canada, this should allow for a more thorough process of review and consultation, which takes the best of the available programs to learn from and shapes them into domestic programs.

Chapter 4
The Manitoba Product Stewardship Program

4.1 MPSP Program Evolution

The Manitoba Product Stewardship Program evolved from the CIPSI process in Manitoba. Long before the CIPSI process had begun, a proposal was made to the Manitoba government from the Manitoba Recycling Action Committee suggesting that distributors become responsible for minimizing the impacts of the waste generated from their products (Fenton & Sinclair, 1996 - 1; Manitoba Environment, 1996). The first Waste Reduction and Prevention (WRAP) strategy report issued in 1991, under the auspices of the WRAP Act, identified this concept of "distributor responsibility" as a focus of any waste minimization activities which may take place in the province (Manitoba Environment, 1996). Four areas following this theme of responsibility were focused on in the report, which were:

1. promoting cooperation among stakeholders and developing partnerships;
2. supporting the development of material collection and processing capabilities;
3. supporting 3R education and information dissemination; and
4. coordinating WRAP initiatives.

It was suggested by government that the theme of the WRAP Strategy Report for 1991 build on the theme of the Recycling Action Committee's central recommendation that the "distributors of products or materials with the potential to become waste" should establish waste reduction programs or financially contribute to waste minimization solutions (Manitoba Environment, 1996). Government

endorsed these recommendations, but the program which has evolved differs somewhat from that initially proposed and applauded by government and others (Fenton & Sinclair, 1996 - 2).

Through the WRAP Strategy, however, the theme of "distributor responsibility" is still considered central to the achievement of waste reduction in the province (Manitoba Environment, 1996). The WRAP Act, proclaimed in 1990, was the legal basis for the Multi-Material Stewardship (Interim Measures) Regulation (MR 39/95) which was put in place in March of 1995. This Regulation is the pillar, which establishes the main components of the MPSP, namely:

- the Manitoba Product Stewardship Corporation (MPSC), and Multi-Material WRAP Fund;
- establishes the levy system on beverage containers;
- establishes the requirement of a new business plan for MPSC operations every three years, and an annual report to the Minister responsible; and
- set the designated materials for collection.

The MPSP is not actually a creature of the Interim Measures Regulation, however, its main operations and functions are essentially controlled through this important regulation. The government is therefore responsible for establishing the activities and responsibilities of the MPSC, and for defining the materials which will be levied to raise funds for the Multi-Material WRAP Fund, managed by the corporation. While the corporation has been formed to operate the funds and the daily business of the program, its existence and powers are largely a creature of the Manitoba government. The government retains much of the power for shaping and creating any further stewardship initiatives.

This distinction of the roles of the MPSC, and the government, is critical to an understanding of waste reduction initiatives in Manitoba. The MPSC is only able to put forward initiatives and activities in which it has the power to do so. It must be responsible for competently carrying out the functions it has been mandated, including multi-material recycling program assistance and fund management. These powers, of course, are delivered from the provincial government. Therefore any evaluation, or criticisms, of the MPSC must take into account this relationship. Conversely, the provincial government must be responsible when it comes to taking credit for the achievements or shortcomings of waste reduction initiatives, and more specifically the MPSP.

The process surrounding a stewardship and waste reduction program for Manitoba has taken some time to unfold, but now covers materials apart from beverage containers. The Waste Reduction and Prevention Act (WRAP Act), which was proclaimed by the Manitoba government in 1990, established the regulatory framework for the province to meet the commitment made by the Manitoba government in 1989 to reduce the amount of MSW produced in the province by 50%, from a base year of 1988 (Manitoba Environment, 1991). Since the release of the 1991 WRAP Strategy Report, numerous stewardship initiatives have taken hold in Manitoba, apart from the MPSP, as part of this overall strategy. Measures to ensure oil, tires, and pesticide containers are appropriately handled after their initial use are now in place. The MPSP is therefore not the only stewardship initiative in Manitoba, but it is likely the most predominant in the consciousness of all Manitobans, due simply to the sheer number and variety of beverage containers in which the levy is applied. Most people have little contact

with the other stewardship initiatives in the province, as oil and tires are not as common a purchase as are beverages.

4.2 Program Objectives & Characteristics

The objectives of the MPSP are to (MPSP, 1998):

- maximize reduction, reuse, recycling of designated materials;
- hold distributors of products and materials with the potential to become waste in Manitoba responsible for a share of the costs of managing those wastes; and
- provide stable, long term funding to support municipal recycling in Manitoba.

The objectives and functions of the MPSC, which operates and manages the day to day functions of the MPSP initiative are the following (MPSC, 1997):

- establishing and administering a waste reduction and prevention program for designated materials consistent with principles of sustainable development;
- providing for effective, efficient, and economical waste management of designated materials;
- administering the Multi-Material WRAP Fund;
- licensing the stewards; and
- publishing and releasing a business plan every three years.

Under the structure of the MPSP, to be eligible for funding, the municipalities must collect as a minimum: newspapers; PET bottles; aluminum; glass; and steel containers. These materials are, in effect, the designated materials

under the Interim Measures Regulation. In addition, there is optional materials which can be collected which includes: magazines; catalogues; boxboard; OCC; gable top containers; aseptic packaging; and HDPE containers (MPSP, 1998). These materials collected through municipal programs, can only come from residential sources. ICI waste is not part of the program structure. While the ICI waste does account for about 60% of the total waste in the province, there is only speculation about its possible management under the MPSP in the future (MPSC, 1997).

Manitoba is the only province in Canada to utilize funds from beverage containers to fund multi-material recycling programs. While most provinces have concentrated on different variations of deposit-refund programs for beverage containers, these funds are not designated towards a comprehensive program dedicated to recycling. Instead, the other provinces manage fees and deposits from beverage containers exclusively to maintain beverage packaging waste reduction.

At the fundamental level, recycling programs are set up, managed, and maintained by local governments, such as municipalities, or townships. Participation is purely voluntary, and while most municipalities are in the program currently, they are not bound to remain. For those participating, the costs related to the local collection, and management of the materials removed from the residential waste stream are shared between the MPSC and the local authority. The MPSC, through the Multi-Material WRAP Fund provides funding for 80% of the costs incurred, with the remaining 20% paid for by the municipality through any means (MPSC, 1997). Different measures have been adopted at the local level, to collect the recyclables under the program. Some municipalities have contracted out services to private firms, while others have relied upon existing

municipal employees and infrastructure. In some instances, contractors are allowed to use municipal equipment and infrastructure in their operations. Recyclables are currently collected at the curb of homeowners in some local programs, while other programs depend upon centralized or scattered collection depots.

The funds delivered by the MPSC to local programs are withdrawn from the Multi-Material WRAP Fund, which is administered by the MPSC. The current levy schedule, 2 cents per beverage container, is placed on nearly all beverage containers at a flat rate across Manitoba. The approximately 90 registered distributors through the program, remit levy fees to the MPSC on a monthly or quarterly basis. No take-back obligations are required of the distributors or retailers in the province. Rather, the municipal recycling programs are the means of container and material collection. Due to the discretion given to distributors to absorb the levy themselves or collect it from others, the levy has not been instituted in the same manner across the province. Some retailers have allowed the two-cent levy to be transferred directly to the consumer at the checkout counter, while others appear to be including it in the price on the store shelf. There is no accounting for different sizes or types of containers in Manitoba. In Germany, a differential levy is maintained determined by factors including the environmental impact of the packaging.

The levy funds are collected and managed by the MPSC, and distributed to eligible local programs to reimburse them for the 80% of the costs, which are experienced at their level. Measures are taken by the MPSC to ensure compliance with the program, involving routine checks of retail outlets, and ensuring all eligible non-refillable containers are registered for the application of the levy

(MPSC, 1997). Municipalities also must account for their costs and the amounts of materials collected in order to remain eligible for program funding. Regular maintenance of all records is essential.

The MPSC program activities are contained in publicly released 3-year business plans. The second such plan released by MPSC covers the period from 1998 to 2001. This new business plan identifies four options for future levy redistribution. The redistribution of the levies is behind schedule, and it appears that it may not be on the agenda in the near future. Of the four options put forward as levy options by MPSC, namely: all materials; printed paper products; more beverage containers; and printed paper and short-life products, this latter option is to be pursued by the board for further investigation (MPSP, 1997). According to the first business plan issued by the MPSC in 1995, paper products including magazines and advertising material and in-store packaging, and packaging of pre-packaged goods were to be assessed an appropriate levy in the "near future", as early as September of 1995 (Multi-Material Stewardship Board, 1995). This has not yet happened.

Promotion and education surrounding waste reduction, and recycling is another facet of the MPSP. These programs only began in earnest in 1998, with approximately $1 million spent to promote the MPSP to schools, and the public (MPSC, 1998). This was a 90% increase over the previous years spending. The campaigns have been directed at both the public in general, and towards specific groups such as school age children. The STAR (Student Action on Recycling) Program has expanded recycling initiatives to more than 300 schools in the province by offering $500 honorariums towards recycling programs (MPSP, 1997). The new phase of the program is called STAR II, and has not yet been put

into place. Other initiatives include providing ongoing support to schools and other institutions for their recycling programs. While the MPSC has targeted recycling awareness as the main theme in their advertising in the initial three year business plan, this now is moving towards the concepts of reduction and re-use awareness. Billboards, print and television media advertisements, and other mechanisms are being employed to attempt to broaden the public awareness of the MPSP and its goals.

One of the most significant characteristics of the MPSP is the fact that it is completely voluntary. The program is structured so as to provide funding to recycling programs operating at the local level, meaning the cities, towns, and municipalities of Manitoba. However, there is no requirement or stipulation which requires any jurisdiction to take part in the program. The Manitoba government, responsible for the design and construction of the arm's length program, has not required any jurisdiction to maintain a recycling program, nor have they ensured that local governments will not opt out of the program now or in the future.

The success or failure of the MPSP has hinged on the willingness of local officials to act upon the general eagerness of the public to recycle in their communities, and thereby taking part in the provincial program. It may be difficult for communities to not participate in the program, given that the residents would demand some value for the levy they pay on containers. While in Manitoba the product distributor is the steward, the fact is that all Manitobans inevitably pay a management levy of two cents for their beverages (either in addition to, or rolled into the price of the product at the retail level). This encourages consumers to demand some level of value and service for their extra "taxes" being paid. The current level of municipal participation is between 90% and 95% of the population

of the province, representing 152 of 207 municipalities or communities eligible (MPSC, 1998).

Many companies that can be considered stewards under the program may also be the manufacturer and retailer of the product, due to vertical integration. Since many more retailers than manufacturers are present in Manitoba, a sensible approach is to apply the levy at this distributor level (MMSB, 1995). From all accounts this strategy has proven effective, however, expanding the levies to other products in the future may prove more difficult to manage due to constantly changing product mixes and the large number of items sold (MMSB, 1995). There are, as of 1998, 90 such product stewards licensed through the MPSP, remitting their levies into the Multi-Material WRAP Fund. The only other means of funding under the program falls to Manitoba Telecom Services, which pays a voluntary steward fee to MPSC in order to have its used telephone directories managed and recycled. This, however, only accounts for less than one per cent of the total revenue of the corporation and is not an important revenue source. The costs of collection and management of out of date telephone books within the recycling system is assisted with this voluntary stewardship.

4.3 Stakeholder Survey Results

The survey, which was conducted as part of the research into the MPSP, provided important information concerning the basic workings and operations of the program. Specifically, the role of recycling and the MPSP in the different regions of the province, including the City of Winnipeg, were reviewed. The survey respondents provided information on the relative success and achievements

of the program as a stewardship initiative, and as a tool for waste reduction in Manitoba. Samples of the survey, and the summarized results are contained in Appendices I and II. The results are presented here in a more detailed form.

Apart from the actual questions, survey respondents were allowed to elaborate on why they chose a specific answer, if they wished, and this information has been condensed and summarized here in addition to the formal, discrete responses. Another opportunity was also provided at the end of the survey to allow for greater input and an informal exchange of ideas regarding stewardship and waste reduction issues in general. These comments have also been taken into account. Good representation was realized from most sectors of the stakeholder groups, including: government; recyclers; consumer groups; non-profit groups; MPSC; and others. The lack of representation from stewards and industry stakeholders is an unknown factor in the results, and their expressed lack of willingness to participate in the survey is regrettable.

Question 1:

The first question of the survey provided a fairly uniform result from the respondents, with 92% suggesting that stewardship meant "responsibility" in some manner. There was some dispute as to who the responsible parties were. Answers ranged from responsibility being the sole possession of the distributors on behalf of industry, to the other end of the spectrum where government and consumers should take the major share of responsibility. Stewardship was also thought to denote partnerships, good environmental management, and waste reduction. The forming of shared responsibilities among many different groups appeared to be the suggestion of most respondents. The general consensus was that responsibility

must be taken by some party for a program to be considered a stewardship initiative.

Question 2(part I):

The majority of respondents stated that the MPSP is not a satisfactory example of stewardship at 54%. Conversely, 15% were confident that, indeed, it is a good example of stewardship. 31% were unsure. These results appear to suggest that improvements to the program need to be made in order for the majority of stakeholders to be convinced that the MPSP is an optimal example of stewardship. What constitutes an optimal example of stewardship was questioned by some, while Germany was used as an example of a broad and effective stewardship initiative by some participants. Comments were made by approximately half of those surveyed, that would tend to categorize the MPSP as a mere funding mechanism for local recycling programs, rather than an effective stewardship model.

Question 2(part II):

In comparison with other stewardship models, respondents were unclear as to how appropriate the MPSP is, as an example of stewardship. The majority felt they were unsure (54%), as to how the MPSP rated in comparison to others. The yes and no response rates were equally split at 23% respectively. Various comments were made including: "the MPSP is not as good as that in Germany"; "it compares well to other North American initiatives"; "it is cost effective"; "it is a good Canadian example"; "and that there needs to be a take-back element on behalf of industry to be considered effective". What became evident in the results in question 2, is the discrepancy between what may be considered an effective or optimal model of stewardship, and the stewardship programs which actually exist.

Question 3:

Almost half of the survey respondents (46%) felt unsure as to whether the MPSC was an effective body adequately representing stakeholders, and the interests of all Manitobans. Slightly less, at 38% felt that it was an effective body, while 15% felt that it was not effective. There was a wide range of comments giving different reasons for the opinions provided. The board was given credit for being a good example of effective leadership. Other comments suggested that industry was too well represented on the board, and that more public interest groups should take a role. The lack of real responsibility given to the board, and their limited mandate from government was also stated as faults. The lack of information relayed to the public from government and the MPSC was cited as a significant problem by some. Other stakeholders commented on the unnecessarily large surplus of money in the WRAP Fund, which was not being spent adequately on programming and recovery activities. No consensus was evident among the comments, as to the reasons for the relative effectiveness or lack thereof, respecting the board.

Question 4:

The primary achievement of the MPSP, at 92%, was perceived to be the stable funding of multi-material recycling programs across the province. All but one respondent stated this as the achievement of record, making stakeholders nearly unified in their opinion. The main comment, offered by most respondents, was that recycling being offered for the first time to almost all Manitobans was an achievement of note. Other comments included: education programs; successes in waste reduction efforts; advertising campaigns promoting waste and recycling awareness; the emphasis of saving landfill space; and promotion of the 3R's.

Question 5:

The primary shortcoming of the MPSP was thought to be the lack of effort on the redistribution of the levies, at 69% of those surveyed. While this was not as unified a response as was that towards the primary achievement of the program, it is still a clear majority. The lack of stewards and the emphasis on beverage distributors for funding all recyclables was seen to be unfair. Another important message from stakeholders was the voluntary nature of the program. While current participation has not been a problem, program success in future hinges on municipal partners. Other comments included: "market uncertainty for recyclables collected"; "MPSC and the government losing sight of the first "R", being reduction, which is not given enough attention"; "business plan commitments not being lived up to"; "recycling is not stewardship"; "not achieving enough waste reduction, just diversion"; "the lack of evidence of packaging modifications or reductions as a result of the program"; and concerns over the large balance of funds in the MPSC account being unutilised. Some respondents provided more than two or three shortcomings of the program, and were unable to pinpoint one as the main factor. Still others suggested that there were, in fact, so many shortcomings that picking one was too difficult. Respondents took longer on this question than on any other, to present and discuss their thoughts.

Question 6:

Regarding the funding mechanism, a majority of respondents felt that the current method of funding for the MPSP was not effective, at 54%. Thirty-one % felt that it was effective, and only 15% of respondents were unsure. These results indicate that those participating in the survey were relatively sure of their opinions on this matter. Few respondents indicated they were unsure of their feelings on

this issue, as compared to some other questions. Some stakeholders indicated that the money raised through the two-cent levy was raising adequate funds for the MPSP, and therefore ensuring recycling funding. However, others pointed out that this fee mechanism was promoting neither stewardship nor equity, and was also not changing buying patterns amongst the public. Concerns were expressed regarding the emphasis on the beverage distributors as the only stewards, and funding the entire basket of goods in the recycling box. The MPSC relying on government to issue the necessary regulation amendments, was seen as a hindrance to stakeholders who wished for MPSC to be more responsible for its own destiny. Other respondents suggested that a deposit-refund system on beverages might be more equitable than the current scheme. Respondents commented on the apparent struggle between the divergent issues of generating funding for extensive recycling programs, or creating a stewardship program with responsible stewards.

Question 7:

On the issue of the designated material collected by the MPSP being adequate, there appeared to be no clear majority answer among those surveyed. While 46% claimed it was adequate, 38% claimed it was not. Only 15% were unsure, which indicated relatively strong feelings, and (or) clear opinions on this matter. Most respondents did not elaborate on their opinions, but some did indicate that the market values of some commodities did not allow more materials to be collected. Others contended that the government is responsible for the designated materials, and therefore the MPSC could not expand the program at their own desire. The inclusion of organics somehow into the program was thought as feasible and necessary by some respondents, even though it has never been proposed by the MPSC or government.

Question 8:

When asked if Manitobans were sufficiently educated about the MPSP, only 8% indicated yes. Those responding no and maybe were equally split at 46% of those surveyed. This would appear to indicate that the overall feeling of the majority of stakeholders was that, in their opinion, not enough was being done in this area. Comments on this matter ranged from education not being an important issue, to education being critical at assuring program success. Some suggested that while it is impossible to reach all Manitobans, the current advertising and education campaigns were not effective at linking the MPSP, and stewardship with their local recycling programs. Others suggested that more public relations money should be spent to promote not only waste reduction, but also the MPSP itself. The targeted audience for the advertising campaigns were also questioned, with comments that suggested older people need to know much more about waste prevention, rather than youth.

Question 9:

Most respondents felt that the MPSP was providing an adequate level of service to Manitobans, at 54%. This compares with the totals for those responding no, or unsure, represented equally at 23%. Very little commentary was offered by respondents on this matter. Of those comments that were given, these included: "we could do better"; "lucky that a paper mill is close to Winnipeg or program would be in trouble from too much useless paper"; "program scope is proportionate to Manitoba's size"; "lots of landfill space"; "don't see need for recycling"; "and only Winnipeg needs a recycling program".

Question 10A:

A clear majority of respondents stated that they felt the MPSP has helped to reduce the amount of waste in Manitoba, at 62%. Twenty-three % stated that MPSP has not helped to reduce waste, and only 15% said they were unsure. Some of those responding yes to this question, tempered their approval by suggesting that the waste being reduced, was actually only diverted - a different concept. Many other comments were made alluding to the fact that waste diversion was not actual source reduction, which is much more beneficial and desirous. There was gratitude expressed by most respondents that something had actually been done to tackle waste in any way. Other comments included: "not all communities are reducing waste"; "reduction only at 10% right now"; "ICI waste needs to be addressed"; "need to move to organic materials"; "need to adopt German model"; "Manitoba will not achieve any greater waste reduction or diversion without program modifications"; "the province should take the blame for not making landfills in small communities more safe"; "the government has not taken enough leadership on the reduction issue"; "MPSP is a good start but more work is needed"; and "blue boxes do not change attitudes".

Question 10B:

The second part of the question, required respondents to move beyond just the narrow scope of the MPSP program, to look at all waste reduction efforts in the province. The MPSP has never been intended as a sole measure to reduce waste in the province by 50%, but it is only one of the means of achieving overall reduction. Those surveyed were made aware of this fact. The respondents gave a very clear response on this question, with no person stating that the goal of 50% reduction would be achieved. A full 85% of those surveyed stated that the goal is unachievable, with many commenting that neither Manitoba, nor any other

jurisdiction in Canada would even come close to the goal. Only 15% were unsure of their opinion on this matter. Other comments included the opinion that some communities in Manitoba may achieve a recycling rate of 50% due to their diligence; only with composting and organic focused programs would greater reductions be achieved; a 50% goal is unrealistic; and further reductions are unrealistic given the low landfill costs across province. Stakeholders appear not to believe that enough progress will be made to achieve the reduction goals set by the governments across Canada, and Manitoba, by the year 2000.

Notes:

Further comments were taken note of and recorded, as some respondents took the opportunity to discuss other issues which were not directly addressed by the formal questions of the survey. Issues which were pertinent outside of Manitoba and Canada, dealing with stewardship and waste reduction, were a common theme. Some respondents contended that recycling is not really necessary in Manitoba, due to the adequate landfill space which exists. This idea that there was no "waste problem" in Manitoba, was important to some survey participants. The issue of whether the MPSP was an effective program, or even whether it was necessary, were also common themes for discussion. The costs of material recovery and recycling being much greater than the costs for landfilling goods, and the lack of revenue generated by recyclable sales, was brought up as an important theme as well.

The direction which will be taken by the MPSC and the government, in any forthcoming program modifications was mentioned often. Manitoba started off effectively, and became a leader in Canada according to some stakeholders, but has been bogged down lately with a lack of action on the levy redistribution

proposal, and other MPSC business plan goals. It has been emphasized, that success in being a funder of a recycling program, does not place Manitoba in a positive light with regards to international stewardship initiatives. A common belief was that without broadening the stewards to eventually cover all of the designated materials being collected, there is no actual stewardship as intended. In fact, some survey participants suggested that if Manitoba does not broaden the program and the funding mechanism, the current perception that the levy is simply a "tax" on beverages, would continue. However, respondents also suggested that Manitoba is in uncharted territory and must go slowly to avoid making mistakes. This attitude was not the sentiment of all people, who instead believed that pushing forth and learning from mistakes made was an important part of the overall process. Manitobans may not be ready to change their lifestyles in order to meet the demands which full cost accounting may place on the products they choose, according to respondents who suggested that unless there is a societal shift, we may only deserve a recycling program such as that we currently have. People are harassed with advertising demanding they "buy more stuff", running contrary to sustainable development and waste reduction goals.

Governments must become more proactive in linking up all of the issues surrounding waste. The lack of integrated planning for landfills, landfill licensing, organic wastes, and recycling markets has negatively impacted the MPSP, and kept tipping fees for garbage artificially low through hidden subsidies according to some respondents. While garbage is being competed for (BFI and the City of Winnipeg, for example) in important regions of the province, stewardship will never catch on. Concerns were raised over the idea that industry will likely continue to produce what it likes, and taxpayers will continue to pay unnecessarily for the waste associated with this packaging. The German model was expressed

often as a model which must be looked at as a learning guide and as an ultimate goal for Canada and Manitoba. Combining user pay systems for garbage pick-up, centralized composting systems, and an expanded levy schedule for MPSP, would instantly create the conditions for proper waste management, and have a huge, positive impact on waste reduction according to some stakeholders. Given these comments by many of the survey respondents, there was gratitude expressed regarding the stewardship effort to date in Manitoba, and that a framework is in place to allow the program to grow and eventually move forward.

The survey results indicate there is no consensus on what is being achieved in Manitoba, or what defines the MPSP. Criticisms abound that recycling programs do not constitute stewardship, but credit has also been given for funding recycling programs through the beverage container levy. There appears to be a struggle between two competing visions for the program according to the results and survey comments. These visions can be described as: the stable funding of multi-material recycling programs across the province of Manitoba, capturing and diverting a certain amount of waste from the stream; and an initiative whereby stewards exist for designated materials, ensuring that the most efficient and environmentally benign packaging choices are made, by providing and receiving feedback through consumers who pay "full cost" for the products chosen. While the former vision is the one currently enjoyed in Manitoba, the latter has been suggested as a goal by many of those surveyed.

4.4 Municipal Programs

There are currently 150 communities participating in the MPSP, taking advantage of the municipal funding formula (MPSC, 1998). Eligible communities are offered to be reimbursed for up to 80% of the net program costs of their local recycling programs. These consist of both depot and curbside recycling opportunities for residential dwellers. One of the advantages of this formula is that local recyclers are largely spared the uncertainty of often fluctuating recycled material markets. Without gambling on the value of the material collected to fund local recycling opportunities, more stability is provided.

Actual payments are based on the tonnage of material collected and removed from the waste stream being recycled into acceptable end uses (MPSC, 1997). Local managers submit their Municipal Report Forms to MPSC containing the information regarding the materials collected, their tonnage, and their destination. This is the basis for tracking all of the material collected locally and is the basis for calculating support payments to local recyclers. Local recyclers are able to modify to a certain degree the materials they collect, in order to tailor their programs to their own residents needs. This has allowed for some form of independence while still gaining the advantage of support payments from the WRAP fund.

The rolling out of the MPSC funding formula in 1995, which allowed municipalities and local governments to take part in recycling programs, had an immediate effect on certain communities, where recycling programs of some form had already existed. In the City of Winnipeg three companies, which had set up voluntary curbside programs with subscribers, were immediately squeezed out of

the local market since no fee was required to participate in the new curbside pick-up. Plan-It, Red Box, and Green Box Recycling programs also lost out in the bidding process for the new curbside program which was contracted out to the private sector by the city. Some volunteer operations were unable to operate in smaller communities, or they evolved into paid positions with the availability of the new funding formula available through MPSP.

Recycling operation closures have taken place in two communities, namely Killarney and Neepawa, in the first month of 1999. The reasons are varied, but the willingness of local government administrators to top up the money offered by the MPSC, to cover all of the costs, is a major factor. Local ratepayers must be willing to contribute money beyond that they have paid at the retail level, when beverages are purchased. The voluntary nature of the program also allows for communities to drop out of the program if they encounter difficulties such as overall budget declines, or public opposition to increasing taxes. The knowledge that recyclable commodities markets are cyclical, and can thereby affect the municipal programs, is important to understand. There have been concerns from municipal officials, voiced through the survey, that if prices dropped too low for some materials they would consider not collecting them. Having said this, almost all communities in Manitoba are involved in the initiative, and one cannot surmise that two communities dropping out are the beginning of a trend.

There is a large discrepancy with respect to the types of services offered at the local level. This has contributed to the uncertainty of programs in some areas in rural Manitoba. For instance, in Portage la Prairie there is a residential pick-up of recyclables in their green box program every two weeks, and this combined with a 2 bag garbage limit has helped reduce pressures on the landfill, and

encouraged waste reduction (Rose, 1999). Garbage over the residential limit is levied at 75 cents per container. Portage has also instituted recycling for multi-residential units in the city. Large containers are placed outside of these units for pick up by private contractor. This contractor also manages the operations of the green box system. The system in Portage is comprehensive, and encourages and rewards those homeowners who take an active role in waste reduction, for the betterment of the whole community. A beneficial contract with a private service provider is an important factor in this arrangement. It has allowed Portage to expand their operations and services without the need to contribute tax dollars, according to town administrators. This contract will be renewed in the following year, and this status may change. It is important to note that while the MPSP is providing stable funding through the 80-20 cost-sharing basis, some communities have been able to take advantage of unique opportunities to enrich their local programs, and minimize taxpayer exposure. The MPSC has allowed the program and funding measures to be flexible enough to accommodate some change.

User pay systems are becoming more popular in Canada, as communities such as Portage and Altona indicate. By charging a fee on garbage, and offering free recycling services to citizens, there is an incentive placed on the homeowner to reduce waste and think about their habits. The goals of lessening pressure on the local landfill, and encouraging recycling are the main emphasis of the initiatives (Schmidt, 1998). Paying directly for the services provided by the municipality or the contractor to the homeowners allows for a more efficient system. Those not practicing waste reduction initiatives end up paying more for their poor habits, than those homeowners taking the time to participate in recycling, composting or waste reduction activities. While describing recycling services in these communities as "free" is not really appropriate, due to the tax

dollars typically involved, it does provide an opportunity for residents to avoid paying even more money for garbage collection. Residents may not be able to avoid the tax portion they contribute, but they can avoid paying the user portion directly at garbage collection time.

The system in Portage can be contrasted with operations in communities which rely not on contracts but on municipal and town employees and equipment. These rely on taxpayer funding to complement the 80% of costs paid by the MPSC. This arrangement relies more on the markets and willingness of the MPSC to change the funding levels to match the often fluctuating market prices paid for the recyclables collected through the program. There are other arrangements which exist in Manitoba, whereby local programs are run by volunteers or non-profit groups. Sheltered workshops are an integral part of many programs across the province. These groups expect to be able to operate the system at a small profit, or at least break even. Often town equipment or workers are offered to non-profit groups to assist them, due to the benefits derived from the community from these recycling programs, and the subsequent pressure taken off local landfills. There is no discrete model which describes the average system in place at the local level. This is advantageous for those communities wishing to tailor specific programs to their patrons needs, but it has created a multitude of approaches towards recycling and the operations of local programs (Friesen, 1998).

Operating on a regional basis is another approach which is common in Manitoba, and other provinces. Bluewater Recycling Association, Eastman Recycling Services, and the Eastern Interlake Regional Recycling Cooperative, are among the many regional recycling coalitions which have banded together to procure more efficient and effective recovery and recycling services for their

citizens. Many of these coalitions have been able to benefit their constituents by attaining improved recycling contracts. Recycling programs have evolved from the desire in local areas to reduce waste and benefit the environment in the 1970's and 1980's, to running the operations as a realistic business which must strive to break even in the 1990's. This includes dropping those recyclable materials which can at times be a drain on the system due to their lack of value, such as Old Corrugated Cardboard, and HDPE #2 Plastic (such as milk containers). These two commodities were singled out by town administrators participating in the stakeholder survey as materials which sometimes result in a net cost to the system. Running local operation's as pragmatic businesses ensures that their customers are being served in an efficient manner (Friesen, 1998).

It is important to note that municipal recycling programs are continuing to evolve, and this means taking advantage of the different and often unique circumstances which each of them finds itself. While many communities had some form of recycling before the advent of the MPSP, these were often the result of volunteer groups trying to meet a community desire for waste reduction and environmental improvement. These systems have not disappeared but they have been changed so that their operations match the new realities under the stewardship initiative. The MPSP is still only a fairly recent development, and as this dynamic system unfolds, communities are finding a program that suits their unique requirements.

Municipal managers have suggested that an interesting element of the MPSP, has been the lack of a connection made by householders and ratepayers to their overall role in the program. For instance, in reality, most consumers pay twice for the opportunity to recycle their materials. Firstly, by paying the levy on

beverage containers they willingly purchase, and secondly, when municipal funds are used in addition to MPSC funding to cover the costs of regional and local operations. There appears to be unanimous agreement among municipal officials, consulted in the survey for this research, in conceding that householders do not understand the role of the MPSP. This includes the levy or the funding formula, which allows for multi-material recycling across the province. This may not be the case in all of Manitoba, but it does suggest that local and regional government officials may want to further enlighten their citizens as to the goals and functions of the MPSP.

4.4.1 City of Winnipeg

Being the largest municipality in Manitoba, holding the bulk of Manitobans within its confines, recycling in Winnipeg is an important site when addressing municipal programs in operation. Residents of the City of Winnipeg had limited opportunities for recycling before the advent of the MPSP, which began funding municipal operations. A curbside system was implemented citywide in February of 1996, after nearly a year of delay. Unfortunately, this delay caused some concerns to surround the program, due to the fact people had been paying a two-cent levy for more than a year on containers. Pick-up delays, and other initial service problems with the contractor servicing the city caused further aggravation with householders, and hundreds of complaints on a daily basis (Winnipeg Sun, 1996). In the initial year of operation, the recycling program was commanding the most public complaints out of any city operated service (Moist, 1997). According to stakeholders surveyed, many feel that the city has never really fully recovered from these initial service problems.

Before the advent of free curbside recycling through MPSP in 1996, voluntary private fee for service recycling programs had been offering the curbside pick-up of materials for Winnipegers. An estimated 12% of households participated in this service (MPSC, 1997). In addition to this pay system, six city operated depots were put in place to retrieve newsprint, #1 plastic bottles, and aluminum cans.

As of 1998, all 168,000 households have curbside recycling available to them, and the depots are still in place to offer service to residents of multi-family dwellings. Service has not yet been extended to multi-family dwellings, such as apartment buildings, in Winnipeg. Apartment and condominium dwellers in 80,000 dwellings account for about 120,000 people which have no practical recycling service in place. This service inequity was to be addressed, however, the city appears to be unable, or unwilling, to proceed with the service at this time, according to civic government representatives (McArthur, 1997). City officials believe the resources are simply not available for the inclusion of multi-family dwellings in the current system. There appears to be some disagreement between Winnipeg and the MPSC as to the costs to the city for supplying this service, since the service is wholly contracted out. The MPSP maintains that it will provide the 80% funding share necessary from the WRAP fund, however, this has not been enough to entice the city to take part. The only recycling option for multi-family dwellers remains the few recycling depots located around the city.

The effect of the curbside recycling program on waste diversion is hard to determine, but it appears there is a 10-12% decrease in waste going to landfills, attributable to the program (Kuluk, 1999). However, the city is not confident

about further potential reductions gained from recycling due to the experiences of other Canadian cities. One survey participant commented that Edmonton found the spending of large sums of money on promotion and education for recycling had only marginal results and did not improve diversion rates as was hoped. However, this does not mean that multi-family dwellings service would not decrease the overall amount of waste going to landfills. Winnipeg, along with the MPSC, has invested money into promotion and education of the curbside program, in order to achieve greater awareness and potentially higher participation among the public.

Implementation of the MPSP program into Winnipeg squeezed out local companies providing a voluntary recycling system. While the decision to exclude these recyclers has remained somewhat controversial, they will be given an opportunity to bid on future contracts when these become available in the year 2000, if they have been able to maintain their infrastructure. Due to the increased activity from the new comprehensive curbside program, more jobs were created than had existed previously under the voluntary programs. Much more recyclable materials were collected also. Law suits initiated by at least one of the three private recycling companies is still pending against the city, and the MPSP, due to the process in which municipal recycling was implemented. It is not known what the effects of this situation may be on the program's future.

4.5 Waste Reduction & Materials Recovery

The amounts of materials collected through the MPSP program provincially, continue to increase every year. In the first three years of full

program operation, the following amounts of material were collected, showing a steady increase reflecting increased participation, and inclusion of more municipalities (MPSC, 1998):

- 1995-1996 - 15,559 Tonnes
- 1996-1997 - 26,748 Tonnes
- 1997-1998 - 32,610 Tonnes

The materials collected in this last year of operation represent a recovery rate of approximately 42% of eligible materials. This is based on the assumption that there is approximately 32 kilograms of eligible recyclable materials per capita per year available, totaling 78,215 Tonnes across the province (MPSC, 1998). The corporation is planning on achieving a 60% recovery rate by the end of the year 2000, thus greatly improving the recovery rates from their current level (MPSC, 1997). The proposed increase in communities participating in the program, along with the proposed introduction of service to multi-family dwellings in the City of Winnipeg, will combine to help potentially achieve this recovery rate.

In order to better understand the materials recovered through the regional and municipal operations they can be broken down into 11 types, representing the 32,610 Tonnes of material that was collected in 1997-1998. The following chart, Table 6, displays these materials collected and their representative weights:

Table 6

MPSP Material Recovery

MATERIAL	*TONNES*	*% OF TOTAL*
Newspapers, Flyers	18,278	56.1
Glass Containers	4,775	14.6
Magazines	2,243	6.9
Boxboard	1,695	5.2
Corrugated Cardboard	1,661	5.1
Steel Cans	1,463	4.5
PET, #1 Plastic	836	2.6
HDPE, #2 Plastic	769	2.4
Gable Top Cartons	439	1.4
Aluminum Cans	433	1.3
Aseptic Containers	18	0.1
Total:	32,610 Tonnes	100%

One can observe that the largest amount of material collected, more than all other material combined, is newsprint and flyers. There is a large challenge in marketing this relatively large amount of paper collected. The MPSC (1997) has identified this as an important challenge for the program, including the requirement of a continued destination for this material. Currently, the Pine Falls Paper Company, north of Winnipeg takes the majority of newspaper. While the value of this material fluctuates, the large source of newsprint close to their operations has benefited the company. At the same time this has provided an important revenue source for all municipal collection programs. These materials

only represent the weight of the material collected, and not the volume which can be important in considering the practical aspects of collection and marketing. For instance, plastic bottles (#1 and #2 types) are quite voluminous, taking up much more space by weight than all other recyclables. In curbside recycling programs it is often necessary for collection vehicles to make numerous trips to and from the depot, to deposit these plastic containers, due to space limitations. The same concern is valid in depot and bin recycling programs, since they can overflow with relatively little weight of bottles. On the other hand, newspapers take up a relatively small space by volume in depots and collection trucks.

While the value of the materials collected is variable, there continues to be the 20% requirement on behalf of taxpayers in most communities to subsidize the pick-up and marketing of recyclables collected. It appears that even after the contribution is made from the Multi-Material WRAP fund to pay for collection and management ($152/tonne in 1999), there is still a need for more money to pay for costs. Municipal managers in regions outside of Winnipeg surveyed, indicated that the general willingness of taxpayers to recycle has encouraged them to continue with the program. This despite the fact that these same communities generally do not have any reason to recycle other than an altruistic one. The space in landfills in Manitoba is not limited, and this fact has some questioning the need for a provincial recycling program. This is due to these extra costs incurred in addition to the two-cent levy paid for beverage containers.

To rid themselves of glass and #2 plastic collected in some regional systems, recycling managers must occasionally pay someone to take the materials off their hands after sorting has been accomplished. The material, unbeknownst to many Manitobans can often end up in the regional landfills when costs for

handling and recovery become impediments. This can bring negative publicity to the MPSP program. These markets are outside the purview of the MPSC Board, and are not "made in Manitoba" factors which can be controlled or even anticipated. For example, market prices for collected newspaper have increased or decreased in the last ten years on the order of forty times. The same holds true for glass, and some plastics (Young, 1995). With these vagaries there will be market cycles that are a constant challenge to many of the materials collected.

The reason not all communities require extra funding is that the contracting services procured independently in some municipalities has sometimes provided unseen benefits. This has forced the contractors to lose money or break even on their costs. Often communities can balance these costs by instituting user pay systems for garbage collection, such as in Portage la Prairie, and Altona.

While the recovery of 60% of eligible material is the goal to be met by MPSC by 2001, we must have an understanding of what this means of terms of overall waste reduction in order to be an effective measure of progress. While a current recovery rate of 42% is being achieved on selected materials, this is only acting on residential waste which is representative of only 40% of the total waste stream. Lack of full participation in communities which do offer recycling programs is a factor which inhibits achieving better reduction. The lack of any real progress in reducing the organic portion of the residential stream is the most significant impediment to further reductions in household waste (Kuluk, 1999; Gibson, 1999). This organic waste is outside the purview of the MPSP mandate, but helps to demonstrate the need for other initiatives and tools to complement the success of the stewardship initiative. In Winnipeg, and most other communities

participating in MPSP, the diversion of waste being accomplished is on the order of 10% of the total residential stream, largely due to these three factors:

- MPSP only applies to select materials;
- not full participation (ex. no multi-family dwelling pick in Winnipeg); and
- no action on organic portion of the waste stream.

With this in mind, we must realize that some progress is being made under the MPSP, in diverting waste from the landfills. The MPSP has brought multi-material recycling to Manitoba and played a role in diverting previously uncaptured material. Targetting easy to remove materials from the waste stream has achieved the results we enjoy so far. Further proposed expansions of the program, such as levy redistribution, and steward expansion, will provide more options to the MPSC and municipal managers to achieve waste reductions, locally and provincially, in future (MPSC, 1997).

4.6 Manitoba Product Stewardship Corporation

The Manitoba Product Stewardship Corporation has a paid staff which carry out the day-to-day functions and operations of the MPSP. The MPSC board of directors, with a total of ten directors from various interests, oversees this staff and controls the operations of the MPSP. The board is mandated by the Multi-Material Stewardship (Interim Measures) Regulation to consist of a minimum of four industry representatives, and three representatives from governments or municipal associations, including the City of Winnipeg. Three more members are appointed at large, and all are appointed by the Manitoba government, through

Order-in-Council. The corporation was initially called the Multi-Material Stewardship Board, but this was changed in 1996 to the current designation as the Manitoba Product Stewardship Corporation.

While the corporation does oversee the operations of the MPSP, their role is to fulfill the mandate from the Manitoba government, through the Minister of the Environment (MPSC, 1997). Materials are designated by the government through regulation, as are the structure of the levy distribution and the Multi-Material WRAP fund. According to the latest business plan (MPSC, 1997), the chief roles of the corporation are to:

- administer the Multi-Material WRAP fund;
- provide for effective waste management of designated materials; and
- establish and administer an effective waste reduction and prevention program consistent with the principles of sustainable development.

The MPSC board which manages the WRAP fund, has amassed a surplus in the amount of $6.5 million for the latest year's operation (MPSC, 1998). Apart from fulfilling the cost-sharing of municipal program operations, this fund is intended to deliver the education and awareness programs to the public, and researching waste composition and waste profiles in Manitoba communities. The corporation provides technical assistance to communities, and holds workshops on program delivery and effective management.

The survey of stakeholders conducted for this research, displayed what can be considered an overall acceptance of the past work of the board and staff of the MPSC. Although the fact that 46% of those surveyed felt unsure as to the

effectiveness of the MPSC suggests some possible confusion is evident as to the role and mandate of the body. This misunderstanding of the corporate mandate has been confirmed through staff encounters with individuals and groups who have put forth an inaccurate description of these duties and responsibilities (Fogg, 1999). Apart from this issue, suggestions from survey participants have been made on what could improve the effectiveness of the corporation. One of the main criticisms was the lack of representation of interest groups concerned about waste reduction and the environment, and having no formal role in the process. There is strong representation from industry, and government, but it has been argued that these two entities have a vested interest in limiting activities for financial reasons, and not ensuring optimal waste reduction and diversion due to any extra costs incurred directly or indirectly by them. Another suggestion which was common in the survey was the need for greater involvement from persons representing the public in general, and not necessarily a specific public interest group.

4.7 Elements of Stewardship & MPSP

As outlined in Chapter 3, there are different elements which can be identified as a matter of government policy for prescribing responsibility on behalf of industry. Fenton & Sinclair (1996 - 1), and the OECD (1997 - 2) have suggested certain principles which are important factors in ensuring that industry contemplates all the available opportunities of packaging stewardship. These elements are a means of reducing the environmental impact of packaging and associated waste (Fenton & Sinclair (1996 - 1). Obligations on behalf of industry specifying targets and dates for achievement, within an effective overall stewardship policy creates the appropriate theoretical conditions for success. One

can use these elements as a guide in order to describe and better understand the characteristics and operations of the MPSP.

Take-Back Obligations

The obligation for specified packaging waste materials to be the responsibility of industry once their consumer use is complete, is considered to be "take-back". Allowing for re-use, recovery or recycling of the material are all valid approaches. While this take-back responsibility can be transferred, there must be a corresponding acknowledgment that this does not negate the continuation of responsibility, financial or otherwise. The lack of a national take-back approach in Canada under the NAPP and within the United States, as compared with the E.U., has allowed for a checkerboard of initiatives across North America. In Canada, certain take-back provisions do exist with respect to deposit-return beverage container systems, but this no longer is the case in Manitoba apart from beer container deposits. These programs do not rely on industry to be the responsible party, instead they may contribute a portion of the overall management costs.

Under the MPSP there is no take-back obligation on behalf of the distributor, under the principle of "distributor responsibility". Nor is this element proposed as an initiative in the future. The distributor obligations are terminated by the payment of the container levy, which allows these distributors to be removed from any take-back of packaging materials. In effect, the distributors have transferred their responsibilities to another authority, the municipalities and the MPSP. A more complicated and expensive transfer has occurred in Germany as well. Material is recovered under the MPSP through municipal programs, but the role of the distributor is negligible past the point of sale. This contrasts with

Germany where manufacturers are obligated to take full responsibility throughout the life of a given product and its packaging (OECD, 1997 - 1). German industry has transferred take-back authority to the DSD, but maintain all responsibility for costs. Other members of the E.U. operate under similar circumstances, and while there is no consistent point of obligation for the take-back provision, there is responsibility that is identified in all cases, and it is clearly defined (Fenton & Sinclair, 1996 - 1).

The principles identified by the OECD (1997 - 2), display that there is an obligation for industry to be involved in the "product chain" with respect to a given package material. The use of quantitative goals for prevention and product re-use and the coupling of product and waste policies ensures the stewards obligation for packaging waste. Manitoba does not currently ensure that distributors become responsible for the packaging they introduce to the marketplace, apart from payment of the beverage distributors levy. There appears to be little pressure within Canada to adopt more stringent take-back obligations like those in Europe (Fenton & Sinclair, 1996 - 1).

Waste Prevention Obligations

The prevention and reduction of packaging waste at source is considered the optimal solution for Canada and other countries dealing with the issue (Environment Canada, 1997). Identifying means of reducing waste and wasteful manufacturing practices ensures that there will be a reduced environmental impact from a given product. The NAPP in Canada, identifies prevention as the first policy to be followed, however, there is no contractual obligations for industry to meet the policy, as it is a goal rather than an obligation (Fenton & Sinclair, 1996 -

1). Some achievements have been reached through the NAPP with respect to the reduction of certain types of waste, especially in the ICI sector. In Manitoba, the prevention of packaging waste is inherent in the MPSP guiding principle which states that packaging and products should be designed so as to minimize their environmental impact (Manitoba Environment, 1996). Rather than an obligatory one, the government has opted for a cooperative approach with stakeholders to achieve waste prevention goals, and to find solutions to waste management problems.

The EU Directive requires member states to put in place measures to prevent packaging waste. Packaging is to be minimized to that necessary so as to ensure only the specific objectives of product integrity, hygiene, and safety are achieved. While European member countries have addressed this issue with varying approaches, most have attempted to meet the objectives as a goal rather than as a quantifiable requirement with a definite timeline for achievement (Fenton & Sinclair, 1996 - 1). Despite not having obligatory prevention requirements, large packaging reductions have taken place in Germany due to industry "optimizing" their packaging through reduction and better technology. The incentive for German industry to prevent packaging lies with the benefits received directly through lowering their levy assessments. This appears to suggest that while obligations were not necessary in Germany to prevent waste effectively, the financial incentives to industry to reduce waste are an important factor. There is currently a lack of financial incentive to product distributors in Manitoba to reduce waste. A combination of approaches which, for example, utilizes a variable levy in combination with prevention goals or objectives, could provide this incentive under the MPSP. A proposed levy expansion outlined in the current MPSC business plan, or a variable rate related to packaging size and material may mimic

Germany's achievements in packaging prevention. Apart from Germany's success, quantified objectives for packaging waste prevention are still considered an important element of stewardship policy. The reductions in new packaging in Holland point to the effectiveness of obliging industry to meet these certain prevention requirements (Fenton & Sinclair, 1996 - 1).

Life-Cycle Analysis

Life-cycle analysis is another important element of policy, advocating that industry be obliged to reduce packaging waste. Holland has been a leader in this area combining Market Economic Analysis with Life-Cycle Analysis to measure the effects of packaging waste on the economy and the environment (OECD, 1997 - 2). While the Dutch Covenant is a voluntary program, some regulatory measures are being taken in the future to put in place mandatory provisions. Manitoba is hoping to put in place the use of true cost accounting under the MPSP to ensure that industry bears the burden of costs for packaging waste management. This measurement tool does not include the aspects of environmental and social costs related to packaging waste. True cost accounting will ensure that product stewards under the MPSP will pay their fair share of system costs, and can choose their optimal packaging strategies. The development of life-cycle analysis as a tool has progressed much further in Europe than Canada. MPSC is considering implications of utilizing life-cycle analysis once the program matures (MPSC, 1997).

Work in Canada has been done to further the development of life-cycle analysis, and make this information and research available to industry and government (Fenton & Sinclair, 1996 - 1). The federal government has proceeded

with developing a coordinated government approach and forming partnerships among industry groups to develop databases and methodologies that would be available for use (Fenton & Sinclair, 1996 -1). As the research and use of this tool progresses, life-cycle analysis may become more commonly available as a means of incorporating the principles of sustainability in packaging manufacturing. The MPSP should be able to benefit from this research.

4.8 MPSP Summary

The MPSP program is a relatively new initiative, meant to partially address the issues of waste, and waste reduction in the province of Manitoba. In four full years of operation, this unique Manitoba initiative has employed promotion and education programs, administered a fund for recycling activities, engineered recycling expansion to much of the province, and gathered and shared information on future expansion of activities. The program is also achieving increasing levels of waste diversion through the expansion of multi-material recycling programs to most Manitobans.

There is no question that the MPSP is unique compared to other North American packaging initiatives. Some are affectionately calling it the "Manitoba Model", to distinguish it as a new approach to waste reduction, and instilling a sense of stewardship among stakeholders (Bury, 1999). Certainly, in a North American context there are some interesting features such as the fact that distributor financed levies pay into a fund to provide multi-material province wide recycling programs. Other Canadian packaging waste reduction programs have some positive features which also make them unique, as noted in Chapter 3. A

ban on non-refillable containers exists in P.E.I.; landfill bans are in place in Nova Scotia; multi-level stewardship programs operate in B.C.; and half-back deposits in many provinces, and full deposit-returns in others. What is consistent across Canada is the use of beverage containers to fund these various stewardship or waste reduction programs.

The successes which can be noted during these initial years of MPSP operation include:

- expansion of recycling to 90% of Manitobans;
- stable funding of multi-material recycling programs;
- increasing the diversion of waste material from landfills; and
- bringing together stakeholders to promote and develop waste reduction activities.

The emphasis of the MPSP in the first three years of operation was the expansion of multi-material recycling opportunities throughout Manitoba, through the WRAP fund, and this has proven successful. Manitobans can recycle more goods at less direct costs to themselves than ever before. The stable funding has ensured viability of municipal programs, without the requirement of large sums of local tax dollars. This is an accomplishment, but does not yet constitute stewardship according to most stakeholders involved in the program.

The incorporation of important elements of stewardship into the program's workings is not as far advanced as those programs in Europe. Take-back obligations, quantitative goals for reduction, waste prevention, differential levies, and life-cycle analysis are important factors which have been identified as essential tools for advancing packaging stewardship. The MPSC is continuing

research into improving the program and it may consider these options, in order to allow mimicking of some of the packaging reduction successes realized in Europe. The institution of true cost accounting, and levy redistribution to other materials, as proposed through the MPSC business plans, may be adequate to take the program beyond a recycling initiative, and more towards the concepts of stewardship and distributor responsibility.

Chapter 5
Analysis & Discussion

5.1 Strengths of the MPSP

While there has been criticism of certain elements of the MPSP from stakeholders, and consumers, there have also been some tangible benefits identified and realized over four years of program operation. The survey conducted as a component of this research, was an important instrument which helped to identify the perceived strengths of the initiative. These program strengths are identified below, and explored further.

The MPSP Program Strengths

- the expansion of recycling opportunities to 90% of Manitobans;
- stable funding of multi-material recycling programs;
- advancing the concept of distributor responsibility and stewardship;
- increasing the diversion of waste material from landfills;
- bringing together stakeholders to promote and develop waste reduction activities; and
- promotion and awareness of alternatives to landfills.

Expansion of Multi-Material Recycling Opportunities

One of the main achievements of the MPSP has been the expansion of recycling programs to over 90% of the population of Manitoba. This has been a direct result of the implementation of the cost-sharing program between the

participating municipalities and the MPSC. This unique element, bringing recycling opportunities to almost all Manitobans, has been credited with allowing the bulk of recycling funding to be derived outside of the taxpayer circle. The 80% share of funding which comes from the Multi-Material WRAP Fund, accumulated through the container levies, has enticed municipal governments to sign on due to their low financial exposure. While the program participation is voluntary, the fact that so many local governments are participating proves the scheme has been successfully implemented. The availability of recycling in Northern Manitoba is slowly expanding as are opportunities in the South. The recycling program in Winnipeg, holding more than half of the province's population, is crucial to the success of the MPSP. Being the industrial and transportation centre of the province, the participation of this municipality is very important in maintaining the high level of recycling achieved to date.

The capturing of the residential waste stream through the MPSP has reportedly diverted 75,000 tonnes of material from landfills since 1995 (Brandson, 1998). This is a significant accomplishment in a province where participation in regional programs was spotty and not effective at large diversions of waste. Some of the secondary results of the recycling expansion has been: increasing employment opportunities at the local level; waste awareness among the public; and a forum for participating municipalities to become partners in waste reduction and recycling.

Stable Funding of Multi-Material Recycling Programs

The stable funding of local recycling initiatives is important as a means to ensure that what is developed today is still in operation tomorrow. Through a municipal share of only 20%, these local programs are spared the downfalls

associated with secondary market downturns, and the excessive costs of collecting materials that are in large supply, but which have little value. The consistency of the MPSC portion of funding is important in allowing municipal partners to plan budgets without undue consideration of market values of recyclable materials. The stable funding is also reassuring to ratepayers who will not be burdened with increasing costs for recycling collection, when landfill tipping fees are so low. While the need to recycle has been questioned in many municipalities, the availability of a funding pool has been integral to convincing municipalities and citizens that recycling and waste diversion are necessary.

The fact that MPSC funding increases corresponding to the tonnage of recyclables collected, it is an incentive to local officials to promote recycling. By maximizing recovery rates and improving efficiency, local partners can take advantage of greater relative amounts of eligible funding. Due to the fact that municipalities still pay a 20% share of costs, there remains an incentive to maintain an efficient and effective collection and processing system. The knowledge that funding will continue regardless of market values, has provided participating communities with the knowledge that they can plan into the future, and make long term investments where necessary, to maintain an effective program. The MPSC has provided invaluable technical support, and tools to help assess true costs related to local management of designated materials as a means of improving effectiveness and efficiency.

The corporation, which manages the WRAP fund, has amassed a surplus in the amount of $6.5 million for the latest year's operation (MPSC, 1998). There has been some contention that this dual role of the board, overseeing the WRAP fund as well as administering expansion of recycling opportunities is somewhat

conflicting. This is because rather than expanding recycling and incurring greater costs to the corporation, the directors may rather ensure that a surplus exists for future use or downfalls in market values of recyclables. Without levy expansion to other materials as proposed in the business plans, the corporation costs are basically fixed. Further expansion to more communities and potentially marginal commodities does pose a financial risk to any existing surplus, and to the stable funding of multi-material recycling. This is speculation, however, and there is no evidence to suggest this as fact, but it does cause one to ponder the sensitive issue of improving recycling while ensuring financial viability. The corporation has successfully provided stable funding to municipal partners, and this achievement should be built upon to expand the program.

Advancing the Concept of Distributor Responsibility and Stewardship

The "Manitoba Model" is a unique North American initiative, and as such, has been an important step in the advancement of stewardship principles in North America. Some have contested the validity of the MPSP as a model of stewardship, in its present form. The exclusion of taxpayers as the sole responsible funders of recycling programs is an important dimension within the province that should be applauded. Through the MPSP, the application of levies at the distributor level has allowed for industry to play a role in the program structure and maintenance. Distributors have become partners with government, and all Manitobans, in the search for packaging reductions and improvements. While the role of industry has to yet to mature, as it has in Europe, there is hope that this will be realized in future program expansions.

Increasing the Diversion of Waste Material from Landfills

The MPSP has had a direct, positive effect on the diversion of waste from provincial landfills. By achieving an ever increasing amount of materials that are collected through municipal recycling efforts, pressures on landfills are lessened. More importantly, materials that are potentially recoverable or useful in another form are saved from being buried, and wasted. The research and exploration into new markets is an important function of the MPSC. The maturation of existing secondary markets for the materials collected is an ongoing process. The diversion of increasing amounts of waste will presumably allow for the development of more opportunities for secondary uses. The MPSP is now annually diverting over 32,000 tonnes of materials from landfills. Through the goal of capturing greater amounts of designated materials, the MPSC is determined to improve the efficiencies of recycling in Manitoba.

One of the challenges that has been identified by the MPSC is the need to improve waste management accounting practices in Manitoba (MPSC, 1999). MPSC, the Manitoba government, and participating municipalities are attempting to become better at accounting for all of the costs related to waste disposal. The benefit from this improvement will be the greater diversion of materials from landfills as the true costs related to waste disposal facilities are calculated. Currently, these costs appear not be calculated on a sufficient basis. Comparing true landfill costs with diversion costs will allow for a fair comparison that can be measured and acted upon by municipal managers.

Bringing Together Stakeholders

Participation in the MPSP is voluntary for the municipal partners, and this fact dictates there must be strong incentives for them to sign on and remain with the program. Keeping stakeholders informed and educated is therefore important. The MPSC has conducted research into the waste that is produced in Manitoba as a means of developing accurate baseline data. This information is useful in providing a benchmark to measure the effectiveness of program results in achieving waste reduction, and as a means of planning future expansions. Through this research, cooperation and assistance is necessary from local governments and employees. By bringing together these stakeholders in a partnership to advance the level of understanding about Manitobans waste habits, the MPSP will continue to improve. The employment of students, local officials, and experts from all areas of the province has raised the level of education and expertise at the local level (MPSC, 1997). Stakeholders are kept "in the loop" through newsletters, and seminars offered by MPSC. These are important as a means of communicating and acknowledging the importance of the many stakeholders which help to ensure program success. Given the level of participation, and the fact that it is generally being maintained across the province, the MPSC should be given credit for effectively bringing together these various communities and developing a strong relationship.

Promotion and Awareness of Alternatives to Landfills

Apart from free technical assistance and advice offered to participating municipalities, including seminars and outreach strategies, the MPSC has reached out to the general public. The MPSP focused early advertising campaigns on recycling and litter awareness issues. Since then, the campaign to raise awareness

and educate Manitobans has emphasized the other 2 R's, reducing and reusing. The strategy has been to build up residential recycling program awareness, and now that these programs are maturing there is less of a need for recycling promotion. One of the locations concentrated upon for messaging has been schools. This strategy hopes to educate children who will, in turn, educate parents about recycling. The STAR Program was introduced in April, 1997 to introduce financial support to schools starting their own recycling programs. Distribution of a newsletter, The Stewardship Circle, began in 1997, and is delivered to all stakeholders involved with the MPSP. Recent campaigns have used the slogan: "use less, live more", in order to address reduction and reuse issues. Clearly, with these and other strategies to reach out to Manitobans, the MPSC is making attempts to make itself heard. Judging the relative effectiveness of these campaigns is difficult, but credit should be given for the MPSC using these various tools to educate Manitobans.

5.1.1 The MPSP in Context

There continues to be concerns raised by the MPSC regarding continuing markets for the recyclables collected (MPSC, 1997). As the amount of material collected increases every year, there is a risk of a glut on the market. There is specific concern surrounding the viability of the Pine Falls Paper Mill, which receives the largest component by weight of the provincial recycling program, newsprint. Without this market, there would be a large strain on overall program viability according to the MPSC (1997). In addition, Winnipeg, the largest municipality, will renegotiate its recycling contract in the year 2000, and there is concern that costs may rise significantly (MPSC, 1997). These concerns aside,

there is optimism on behalf of the MPSC that the program will continue to grow effectively and be a viable operation (MPSC, 1997). The MPSC has worked to explore new opportunities for marketing recovered materials. Developing new markets are important as the MPSP matures, to ensure stable growth can continue.

With credit to Manitoba, the government is attempting, through the MPSP, to achieve a stewardship approach to packaging and packaging waste, in isolation of most other provinces. Economic necessity has dictated that Europeans are less wasteful by comparison. Necessity brought forth programs instilling the "polluter pays principle" developed in Europe to assign costs and responsibility for wasteful practices (Ryan, 1993). Cheap, and available landfills, and a wealth of natural resources has allowed Manitoba to be less demanding with waste reduction. While Canadians do produce much more waste than Europeans (Environment Canada, 1997), a smaller population density has provided a buffer to Manitobans, which is not present in Europe. Relatively abundant space for landfills, and a low population density has allowed Manitobans and Canadians to be more wasteful than Europeans, in general.

The European reality is that an international program exists through the European Union, which members must adhere to, and achieve a certain level of waste reduction / valorization performance. Lack of space, high population densities, and culture, have all played a part in the European pollution prevention programs. Germany has embarked on stewardship as a means of achieving waste reduction and diversion to avoid prohibitive landfill costs, and better manage the waste stream (Ryan, 1993). By assigning responsibility to industry, Germany moved to the forefront and set an example for others to follow, and learn from.

Manitoba's program may not be as advanced as Germany, but it has been an attempt to address some of the inequities inherent in municipal waste management programs where taxpayers have traditionally beared the burden of all costs. Moving costs from taxpayer to consumer is still a goal of the MPSC. The proposals to expand levies to other products besides beverages, and the use of true cost accounting as a means of determining the costs associated with managing a given material in the waste stream, have not yet been realized by the MPSP but are still planned developments. The MPSC must not only educate Manitobans about itself and its goals, but change a culture of dependence on "free" disposal of garbage. The lack of accounting of true costs related to waste management in the past has contributed to the landfill being a cheaper alternative to diversion today. Manitobans have now accepted recycling, and may be ready to accept packaging stewardship if given the chance.

5.2 Weaknesses of the MPSP

The facets which make up the MPSP are linked, which makes them difficult to discuss in isolation. However, for the purposes of this research they have been singled out and discussed as individual tenets for the purposes of clarity. This linkage must be considered, and remembered by the reader, when reviewing the following information. The apparent weaknesses of the MPSP which have been identified through the literature and stakeholder survey research are listed below, and discussed further.

The MPSP Program Weaknesses

- no levy redistribution;
- beverage containers are levied independent of volume, or material constituents;
- voluntary municipal participation;
- taxpayer contributions necessary for municipal programs;
- no evidence of packaging reductions / re-use as a result of the MPSP;
- consumers role is misunderstood;
- lack of emphasis on reduction & re-use alternatives;
- MPSC role limited by government;
- performance targets lacking;
- stewards not modifying practices; and
- levy is applied independent of management/social/environmental costs.

No Levy Redistribution

The MPSC's initial business plan had proposed to redistribute the levy from beverage containers, to other materials before the end of 1995. It has been nearly four years since that implementation date has passed, and there has been no imposition of a levy on newspapers/flyers/magazines, or packaged goods. Again, in 1998 there was to be a new levy applied to fibre materials, and this has not taken place. There appears to be a great degree of difficulty being encountered by the MPSC, in moving the MPSP past the point of relying on a single funding source, and this has created disappointment among many stakeholders. More than two-thirds of the people surveyed for this research identified levy redistribution as the primary shortcoming of the program. The reasons for this have not been

clearly identified apart from the fact that the revenues realized from the beverage container levy have far outpaced expectations. This has provided some breathing room for planners to ponder the necessity of expanding the levy, since enough funds were being collected to fully support local recycling programs. However, this ignores the reasoning behind the reasons for levy expansion - holding distributors responsible (as stewards) for the products and packaging waste they introduce to the marketplace.

There is no indication what action will be taken in this area, and while the current MPSC Business Plan (years 1998-2001) is already behind schedule, there has been no announcements of potential modifications to the plan. The view of many is that the MPSP may not expand unless the revenue generated from beverage containers begins to decline, or be outstripped by recycling demands. While the MPSC hopes to hold the distributors of materials and their waste products responsible for a share of costs associated with managing those wastes, only beverage distributors (and the consumers paying the levy) are paying the costs of the recycling programs that Manitobans now enjoy. This is not what was intended by either the MPSC or the Manitoba government, and it has created a large free-rider problem whereby all the producers and distributors of the other designated materials in the blue box, are not paying a cent towards the managing of their waste. Regardless of the value of the secondary markets for the materials collected, their must be some semblance of responsibility assigned to industry in order to comply with the basic principles of stewardship, and the objectives of the MPSP itself. The MPSC has stated that: "without it [levy redistribution], the concept of product stewardship and distributor responsibility is incomplete" (MPSC, 1997).

Stewardship principles suggest that there must be a shift from the taxpayer to the user for costs to become representative of true costs (Bury, 1998). Through this, costs become internalized to represent the actual management costs associated with packaging, not just direct costs to produce it. To be more comparable to France, Germany, the Netherlands, and Belgium, levies in Manitoba would have to be associated with many more packaging materials. These packaging items also become the responsibility of municipalities and the taxpayers in general, for costs associated with after use management in Manitoba, since stewards have no take-back obligations after delivery to the consumer.

The stakeholder survey results suggest that while a stewardship program with broadly based levies would be a positive development in Manitoba, the lack of a national framework may be an impediment. In fact, more than half of the survey respondents felt that given the limitations in the province, the current program was providing adequate service to Manitobans. There also appears to be inherent difficulties in forging ahead independently without support from other provinces, or the Federal government. Manitoba's economy is relatively small, and the lack of consumer goods manufacturing and production facilities, as compared with Germany and other countries, may make comparisons with these other national programs impractical. However, survey results also indicate that stakeholders thought that many improvements could be made to the MPSP. Apart from some limitations, progress can be achieved through expanding the goods and packaging materials levied under the program. Developing alliances and partnerships with other provinces could help to alleviate the difficulties encountered by Manitoba in progressing with the latest MPSC business plan proposals.

Beverage Containers Levies

The beverage container levies were first applied in 1995, and have since been the funding source for the Multi-Material WRAP Fund, apart from MTS acting as the lone voluntary stewards. This focus on one steward has proved to be an inequity, not apparent in other stewardship programs operating around the world. Importantly, the levy rate is not variable depending on the size, or material of the containers, and appears to simply be an arbitrary fee to raise funds. Choices are not available to Manitoba beverage consumers, and they are not provided with any signals to reward good behavior, in allowing the selection of packaging that has less environmental impact.

In essence, consumers buying beverage containers are paying the costs for the MPSP across the province until a redistribution takes place. The main difficulty with the levy appears to be that it is static. However, this does provide some benefit in the ease of use for those distributors and retailers tracking and paying the levy, and for the MPSC in collecting it. No apparent efforts have been made to make the levy variable. A good contrast to this would be the variable deposit-refund or half-back rates applied in some provinces, including Saskatchewan, and P.E.I. The MPSP and the materials collected through it are still unfairly subsidized by beverage distributors, and then passed onto consumers. The reliance on a single funding source for the WRAP Fund, those who consume beverages, makes it more difficult for the program to be classed as stewardship. Manitoba, however, is the only province to use these funds directly to assist recovery and recycling of beverage containers and other designated materials.

Those consumers which may take part in more environmentally damaging or wasteful activities, than those consuming soft drinks and other beverages, are not being accorded appropriate responsibility for their purchases and actions. In addition, purchasers of containers that may be easier and cheaper to manage, or whose post consumer material may be less damaging to the environment, are treated equally without any extra benefit. Materials more valuable to the recycling system are also not heeded. This is the case with aluminum containers versus #1 plastic bottles, whereby a more valuable (recycled value) and smaller container is not acknowledged through the levy formula as being a wiser economic choice. The abundance, lack of value, and volume of #1 plastic containers has been a burden on some municipal systems, and is relatively costly to retrieve. When potentially less wasteful decisions at the local retailer do not benefit the consumer directly, the wrong signals are being sent. While there is variation, European countries have ensured that weight and/or volume characteristics are the basis of applicable levies. Germany, with the most complicated fee structure, has ensured that the fees paid represents the costs for collecting and processing the material. European program levies do not yet represent life-cycle costs, but they are something which the MPSP can and should learn from.

Stakeholders and others have criticized the Manitoba levy for being what amounts to a tax on beverages and their containers, rather than an indication of the relative cost of the management of the materials within the program. This inequity, if allowed to continue will hinder any future program activities.

Voluntary Municipal Participation

While this is considered a weakness of the program's structure, it has not yet proven to be a difficulty in these initial years of MPSP operation. Most stakeholders appear to feel that voluntary participation for municipalities is being offset by the stable funding mechanism in place, which is a large enticement. The amount of tax dollars necessary to maintain local recycling systems does not appear to be an impediment. The majority of people in the province are currently being captured in the MPSP. The MPSC and the Manitoba government should be cautious, however, with any future program modifications, such as levy redistribution, so as not to disrupt the partnerships that have been cultured. Any significant reduction in the numbers of municipal partners, could have a negative impact on the MPSP success.

There is difficulty inherent in a program with voluntary participation. Since the MPSP is now a successful recycling initiative, any attempts to tinker with the levy or the funding formula, to progress the concept of stewardship, could affect the municipal partners. The impacts, if any, would be hard to determine, but they must be given more weight under a voluntary system, than one that is mandatory. Unforeseen negative impacts on the partners would allow municipalities to walk away from the MPSP completely, and leave the corporation without the tools necessary to bring them back.

Taxpayer Contributions

There remains a requirement for taxpayers at the local level to fund the municipal portion of the cost sharing agreement with the MPSC. These types of arrangements have been criticized, because designating responsibilities towards taxpayers rather than consumers and industry, ignores the principles of, and does

not promote, stewardship (Bury, 1999). One can argue that under the MPSP, only consumers and taxpayers (often the same people), are footing the bill for the entire initiative since distributors have allowed the two cent levy to be passed on to the retail consumer. Consumers paying a share, is a positive development, since they are partners and stakeholders in the program, through their purchases. But it is unrealistic to rely on the same people to pay twice for the same service - once through taxes, and again at the retailer.

There has been an argument that it is crucial that the municipal partners pay a portion of the financing for the services received under the MPSP. This is because having a stake in the program's costs ensures the partners are fiscally prudent and accountable for, at least, their portion of the costs. This is logical, but it does not excuse the fact that only when there is a shift from the taxpayer to the user, will the costs incurred become more representative of true costs (Bury, 1998). In effect, the MPSP is being maintained through a subsidy.

Packaging Reductions / Reuse

The MPSP has successfully diverted waste from Manitoba's landfills at rates equaling approximately 10% of the total residential waste stream, and approximately 44% of the designated materials stream. This is a positive improvement, but there has been little or no action on the other two R's - reduce and reuse. One of the MPSC's objectives is to *"maximize the reduction, reuse, and recycling of designated products and materials"* (MPSC 1997). There has been considerable effort given to the cause of recycling, but the emphasis on reduction and reuse appears to be lacking. To be fair, the stakeholder survey identified that the majority of people (62%) believed that the MPSP has helped to reduce the

amount of waste in Manitoba. This is an important perception and should not be ignored, but there is no evidence to indicate that it is true. Some stakeholders agreed that "reduction" is not an accurate term to use, since what is being achieved in Manitoba is "diversion". This is a critical point to keep in mind, because even though they are very different concepts, the distinction can sometimes fade. What is being achieved in Manitoba is waste diversion, and some may say waste reduction (from the amount of residential waste delivered to the landfill). However, waste reduction is not "source" reduction, which is the primary goal of stewardship contained in the NAPP protocol, signed by Manitoba.

The fact that levies have not been redistributed to other materials is cause for concern, because until other stewards become partners in the MPSP it will be difficult or impossible to focus on reduction of the designated materials in the recycling system, apart from beverage containers. The MPSC does state that waste reduction (meaning source reduction) will be incorporated "as the primary step in the waste management hierarchy" (MPSC, 1997), but there is no timeline or goals for implementing this strategy. There must be a greater effort to incorporate the source reduction message in information provided not only to the public, but to industry and distributors who will have to play a significant role in this task. As a means of reducing their levies, the majority of industries in Germany had managed to "optimize" their packaging by 1992, thus benefiting both the environment, and themselves (Fenton & Sinclair, 1996 -1). When, and if, the packaging industry becomes partners in the MPSP, they will have incentives to reduce their packaging, as happened in Germany. The static nature of the levy in Manitoba does not currently provide any incentive to industry to make an effort at source reduction, and this must change if the MPSC is to achieve all of its objectives.

Consumers Role Misunderstood

When consumers pay the full costs for the products they choose in the marketplace, the problem of waste will be solved (Crittenden, 1997). This is an important concept to keep in mind when discussing the MPSP, because the statement suggests consumers are an important link to the success of any waste reduction initiatives. Presumably this includes the MPSP. In Manitoba the linkage to the consumer has been attempted with the adoption of the distributor levy on beverage containers, as a means of assigning management costs to those same distributors. The levy should reflect the costs to manage the given package, and these costs (not simply the levy) should eventually be passed on to the consumer. However, this is not yet the case.

The Manitoba formula runs counter to the philosophy of stewardship in that it does not ensure that consumers are rewarded for smarter, less wasteful purchasing (Hawken, 1993; Environment Canada, 1997; Environment Canada, 1996). Consumers must be sent appropriate economic signals in order to make informed and environmentally benign decisions with respect to their everyday purchases (Hawken, 1993).

The MPSP has come under some criticism due to the initial reliance on recycling and litter awareness, rather than on stewardship principles. Promoting the benefits of recycling and anti-littering programs are certainly important to society. The program may want to concentrate now more fully on the benefits of reducing waste, and how consumers can make choices in their lifestyles and purchases to affect change. Educating people to be a part of a recycling program

is necessary, but the MPSP can be much more than that. Consumers are in fact participants and stakeholders at the grassroots level of a province-wide stewardship initiative. The choices consumers make will become relatively more important to the program when levies are broadened to include other materials. This is because the levy will apply to a larger basket of goods, and this will affect all consumers. Minimizing the role of consumers to filling the blue box on garbage day will help to ensure they continue to misunderstand the role of the MPSP, and their place in it. There must also be a visible link between the MPSP and the two-cent levy some consumers see on their grocery bill. There was strong sentiment among stakeholders that people do not understand the levy as the funding mechanism for their municipal recycling program. This, again, should be corrected. One simple but effective mechanism to help to achieve this linkage would be making literature and posters visible in retail outlets clearly describing to consumers why there is a levy on beverages.

Lack of Alternatives - Reduction & Reuse

The focus of the MPSP has been the funding and recovery of designated materials. While this approach has proven successful at increasing the recovery of materials, it has forced the exploration of packaging alternatives to be somewhat non-existent. Communities throughout Manitoba are exploring new ways of dealing with waste on their own, by instituting user pay systems that force citizens to come to grips with the amount of waste they produce. Homeowners taking personal responsibility and paying for their excess waste, beyond their tax assessments, has reduced the garbage going to landfills in many communities, including Portage la Prairie and Altona. Unfortunately, these successful locally run programs, aimed at reducing waste, are not operating in conjunction with any

MPSP initiative. The MPSP is still focusing on maximizing recovery of designated materials without heeding the other two R's. There will be no action on source reduction of waste, according to the business plan, until sometime after the year 2001 (MPSC, 1997). Some promotional and education programming is being targeted at people in an attempt to convince them to reduce waste, but there are no plans, obligations, or instruments being introduced as a means of achieving reduction. There is no evidence of source reduction in Manitoba, under the MPSP. Packaging is not being changed, or "optimized" as it has in Europe, to save materials and be more efficient. This source reduction may only be achieved in Manitoba through levy expansion, and the full attention of industry and distributors to reduction performance targets.

The user pay system for homeowners highlights an interesting approach to reducing waste, that could actually have an application to packaging producers and distributors. Providing incentives to industry to produce less packaging and packaging waste, just as in the homeowners case, could have a positive effect on source reduction efforts. When industry is faced with increasing costs for doing business as usual, new and innovative means of production can result, just as in Germany where the majority of packaging producers had reduced the volumes of material produced for the market (Fenton & Sinclair, 1996 - 1). There remains a lack of responsibility being assigned to packaging distributors in Manitoba, past the collection of the two-cent levy for beverage containers. A linkage must be made allowing the distributors in this province to become an integral part of the MPSP, rather than a tax collector. A means of ensuring industry contemplates packaging stewardship opportunities is to obligate them to meet contractual obligations. Setting performance targets and dates for achievement would ensure that industry considers all of the packaging reduction opportunities at hand

(Fenton & Sinclair, 1996 - 1). While specific obligations may not yet be necessary in Manitoba, one cannot simply assume waste reduction will take place through unspecified voluntary measures, when industry has demonstrated that it is disconnected from the stewardship process. Evidence from the stakeholder survey indicates that the first step in achieving reduction and reuse would be to communicate with industry and educate them as to their role within the MPSP. Source reduction and reuse opportunities can only happen as part of a larger scheme including expansion and redistribution of the levy, and an expanded base of stewards.

Stewards not Modifying Practices

While it appears that some of the proposed MPSP developments appear to have been forgotten or delayed indefinitely, this does not put the program in a positive light as a stewardship initiative. Expansion of the levy towards newsprint, and packaged goods is overdue. Stewardship initiatives in the Netherlands are voluntary, and Germany's is mandatory, but these two programs have been successful at educating industry to the needs of stewardship. They both allow stewards to be responsible for waste reduction and diversion requirements using their own methods of management. Both programs have relied on legislation, or the threat of it, to enforce certain principles and responsibility on behalf of industry. This contrasts with a more conciliatory approach in Manitoba, that has not assigned stewardship responsibilities for any packaging materials other than beverages. Given the levy "pass-through" which has occurred from distributor to consumer, without recognition of the distributors obligation, these current responsibilities have been questioned. The difficulty encountered in the

stakeholder survey, failing to obtain participation from industry, may suggest the program is not a priority in their view.

A common theme emerging from the survey comments from stakeholders contended Manitoba's program resembles more closely a tax on beverages, rather than a levy. Instead of providing incentives to distributors to be less wasteful, and promote reduction, it is feared the levy is falling short. There has been an apparent lack of success at educating industry to "buy in" to the principles of the MPSP, and instilling in stewards a sense of responsibility to manage packaging as they would the products within them. While industry fully supported the WRAP levy when proposed (Manitoba Environment, 1996), it is unclear that they understood or fully supported the concept of being stewards for the actual packaging being levied. These factors indicate MPSP is less advanced as a stewardship approach than in the European Union, and that the MPSP objectives are not yet being met.

The main issue, reflective of these other matters, appears to be the general lack of responsibility assumed by those producers and distributors supplying goods to the Manitoba consumers. Passing on a two cent levy to consumers without any recognition of making packaging less wasteful, or more effective runs contrary to the MPSP objectives.

MPSC Role Limited by Government

Very few stakeholders singled out the MPSC for criticism, or to chastise them for being perceived as ineffective in their activities, at 15%. More than double this number felt that they were effectively performing their duties, at 38%

of those responding. There was no direct question on the survey to indicate the level of satisfaction with the Manitoba government's handling of the waste issues in Manitoba, so it is difficult to make comparisons between the government and the MPSC. These two entities basically control the MPSP. However, the government maintains much of the power in the relationship. The Manitoba government defines the structure of the MPSC, and is responsible for the Interim Measures Regulation, which defines the materials and their levies overseen by the corporation.

While the Manitoba government did identify the need for broadening the funding base for the MPSP as early as 1996 (Manitoba Environment, 1996), no action has been taken to date. There is no clear indication why this expansion has never taken place, apart from the fact that program recovery costs have been less than anticipated in these initial years of operation. The WRAP Fund, derived from the levy, has been more than adequate in funding the necessary programs operated by MPSC. But this does not address the fact that one steward is funding the entire recycling initiative in the province. The MPSC may not wish to expand the program at this time, however, the fact that the authority remains with the Manitoba government, ensures the decision cannot be made by the corporation.

One can surmise that since the MPSC has proposed twice to expand the levy, and these proposals have both gone unheeded, that there may be some resistance to the idea within government. The lack of responsibility given to the MPSC has been highlighted by stakeholders as a negative aspect of the program. Business plan proposals have quietly been ignored without adequate explanation of the reasoning behind the delays. There appears to be great confusion not only amongst the public, but among stakeholders, regarding the different

responsibilities of the government and the MPSC (Fogg, 1999). This lack of clarity suggests that the powers assigned to each authority need to be clearer, or redesigned. Greater powers assigned to MPSC would allow the corporation to be more responsible for its own destiny, and could ensure that the distributors and industry representatives on the board become more responsible for the decisions affecting their packaging practices. In Germany, the industries responsible for producing waste are allowed the decision-making authority to remove that same waste at their cost. This same model could be applicable to Manitoba, allowing industry to be responsible for the methods and costs of recovering waste from the residential stream, and achieving targets set by government. Government should maintain authority for performance targets and obligations assigned to industry, but insist that industry maintain responsibility for program functions. Providing distributors with more accountability through the corporation, may allow the MPSP to be more effective, and would allow it to more closely resemble a stewardship model.

Another approach to redefining the roles and responsibilities of the MPSC and the Manitoba government could be to impose an intermediary, which could help to protect the interests of the public. A body such as the Public Utilities Board (PUB), which is already active in making decisions on many of the fees and rates charged to the public by Manitoba utilities and industries, could assist in the levy redistribution process. The PUB could help in the proposal to redistribute costs to other designated materials besides beverages, or to assist in the assigning of variable levies dependent of materials and volumes. Their expertise could be useful in partnering with the MPSC to expand the research into the specific material recovery costs, and future designated material levies. There is a large WRAP Fund balance currently under control by the board, estimated near $6.5

million (MPSC, 1998). Some stakeholders questioned the need for this large sum of money to go unspent while more recovery efforts were needed. The PUB could have a role in limiting the reserves that are necessary for the MPSC to be effective.

Performance Targets Lacking

The MPSC has projected the recovery rates that will be achieved under the latest business plan between the years 1998-2001 (MPSC, 1997). While they are considered projections, they in no way resemble goals or targets. In other words, these projections will be the natural result of recycling expansion efforts and increased recovery, rather than something which the corporation will strive to achieve through employing specific tools and instruments. Most importantly, there is no obligation directed to a given party, specifying actions or penalties in case they are unachieved. There is no formal waste reduction targets to be achieved under the MPSP, and while it is part of a larger program (the WRAP strategy) which wishes to achieve a 50% reduction rate by the year 2000, this is still far from the formal targets set in Europe.

The Dutch have set qualitative and quantitative goals to prevent or reduce packaging, and employ life-cycle analysis, with the onus on industry to achieve the tasks on their own terms (OECD, 1997 - 3). Likewise, Germany requires recycling targets to be achieved requiring life-cycle analysis. In France, the stewardship initiative requires a 75% reuse/recycling/recovery of packaging by the year 2000 (OECD, 1997 - 3). Japan is developing targets for reduction and recovery of packaging that will require significant effort on behalf of industry. On the other hand, Manitoba desires to "maximize reduction and recycling of designated materials..." (MPSC, 1997), without formal targets or setting specific

responsibility for stewards to become active in reducing, reusing, or recycling their packaging. Targets are not only set, but are being achieved in Europe, and while there may be considerable recycling and waste diversion taking place in Manitoba, a lack of formal targets makes it more difficult to measure progress and achievements.

Costs Independent of Levy

The levy imposed on beverage containers is independent of the environmental, social, or management costs related to the resulting packaging and packaging waste. Attempts are being made by the MPSC to provide research into true cost accounting methods which will approximate the management costs for recovering and handling a given package through the stream. This is a positive step, but the current arbitrary levy apparently reflects nothing at the moment besides the need to raise funds for multi-material recycling opportunities. Building on the achievements of the MPSP to date, as a stable funder of recycling opportunities, will most certainly involve the rehabilitation of the levy rate. Having said this, there is no example of a stewardship initiative which has been able to fully reflect all of the costs associated with a given material in its levy or fee structure. Life-cycle analysis is still a difficult process, and costs are often hard to track. However, the attempts made in European countries have resulted in positive packaging reductions, and the targets for recovery are being met. Examples are available for the MPSP to learn from and adapt for use right here in Manitoba.

5.3 Stewardship & Packaging Waste

> *Only when the incentives to continue the manufacture of waste are removed, and only when the risks and costs far outweigh the gains and profits will designers, engineers, chemists, and investors turn their attention to safer alternatives. We use wasteful methods today because they are the "cheapest" solution... In a restorative economy, the least expensive means of manufacturing a product should also be the most environmentally benign and constructive means. Until this is so, there is an inherent design flaw in business: being "economic" and being sustainable remain in conflict and at odds.*

As stated by Hawken (1993) in the above passage, business will continue to produce certain goods until they receive signals which somehow compel them to change. In other words, there must be an increase in the price of doing business as usual. This is the struggle facing the policy makers in any attempt to ensure sustainability in the production and distribution process of a given product. This is very true of stewardship programs where some degree of responsibility is assigned to business, by targeting the costs associated with their products. A large problem of introducing packaging stewardship is the traditional divisions of responsibility among actors for the product design and quality, environmental protection, and for waste management (Fenton & Sinclair, 1996 - 1).

Markets are superb at setting prices, but incapable of recognizing environmental and social costs. This causes harm environmentally and socially, as the markets and the goods produced and sold in them do not adequately reflect the real costs associated with their production and disposal (Hawken, 1993). This

leaves one left to determine how adequate costs and signals can be sent to business, in order to internalize all of the costs involved. These costs are inherent in a given product's manufacturing, distribution, and processing, including the packaging portion which becomes unwanted material on the consumer's part. This need to better internalize these costs, is a challenge to both business and government, and indeed our whole society.

According to the Manitoba government, MPSP hinges on the role of the product distributor as the steward, to allow for a more equitable strategy for dealing with packaging and other materials (Manitoba Environment, 1996). With responsibility being taken by the distributor of the products, less reliance would be thrust upon taxpayers to deal with the "social costs associated with the production, distribution, or disposal of goods..." (Manitoba Environment, 1996). Unfortunately, while there is a levy submitted by the product distributors in Manitoba at this time, it appears to be an arbitrary charge on beverage containers put in place as a means of raising funds. The levy is not variable, which makes the application of it simple, and practical. But it clearly does not represent in any way a means to allow consumers to make more informed choices, or to assess greater costs to relatively more harmful or difficult to manage container materials.

The levy has not apparently had an influence on product design, or any other feature of the products being sold in Manitoba. There has also not been an expansion of the levy as planned to other products, which would more adequately reflect the costs of managing those products as stated above. The largest portion of the multi-material recycling program is newsprint and other paper products, which have become free riders in the current scheme. The designation of stewards for these and other items will be an important development. In Manitoba,

therefore, the only stewards at this time are distributors of beverages, and while they submit fees to a fund, it is unclear what actually distinguishes their role as being "stewards" from that as tax collectors for the Multi-Material WRAP fund. This is a dominant thought among those participating in the survey for this research.

Some confusion and anger was created among the citizens of Manitoba, and especially those in Winnipeg, which had been paying (directly or indirectly) into the levy fund through their beverage purchases for up to 15 months without any curbside recycling being offered to them as promised. In Winnipeg, the curbside recycling program for residential dwellers did not begin until March of 1996, and the money contributed by the provinces largest municipality had by then contributed more than half of the $5.6 million in levies to the Multi-Material WRAP Fund. To further add to the dissension was the apparent willingness of the product distributors to simply pass on the costs of the levy directly to the consumer, and also charging sales tax on top of the levy. In fact, it was made clear by representatives from the bottling companies and grocery stores in 1995, that only the consumers would be responsible for providing funding to the program, as they stated flatly that they would never absorb even a portion of the levy costs (Krueger, 1995). The confusion around the payment of the levy and the lack of residential recycling in Winnipeg and other communities created very negative publicity for the MPSP.

Companies which produce the beverages sold in Manitoba, appear not to be receiving the "signals" under the MPSP, which would encourage waste reduction or other forms of improving their packaging in order to make them more environmentally benign. For the purposes of the stakeholder survey, numerous

packaging producers, and distributors were contacted to allow for their insights into the research process. What was found was a consistent lack of understanding of the MPSP and its function of promoting stewardship among these same stakeholders. In fact, no single company or industry group producing beverages, packaging, or distributing products for this market, agreed to take part in this survey. Most insisted that they were not part of the scheme, and that it had no impact on them in any way, thus making them uninformed regarding the goals and objectives of the MPSP. One international beverage company regional manager commented on his complete lack of understanding of the "product stewardship thingy", since his company was not involved in it. Unfortunately, this manager could not defer to any of his employees since, according to him, no one else was more knowledgeable than he on the subject of stewardship. This type of comment displays a level of misunderstanding of the MPSP that is unfortunate.

Other companies simply did not return numerous telephone messages or declined to answer any questions due to their understanding that the program did not concern their interests. In effect, this lack of responsibility on behalf of producers displays a deep misunderstanding of producer responsibility in general, and the goals of the MPSP in particular. Beverage producers, apparently, do not consider their role in the MPSP as significant. One of the goals of the MPSP is to, among other things, reduce the flow of designated materials to the landfill. But if distributors do not feel they are in the loop of the program, as partners and stakeholders, how will source reduction occur? Industry may reduce packaging for economic reasons, on their own free will and this is beneficial, but this ignores their responsibility to heed the principles of stewardship and of sustainable development. Specific obligations imposed on industry are preferred as an effective means of promoting packaging stewardship, rather than a voluntary

initiative (Fenton & Sinclair, 1996 - 1). The MPSP is not a vo
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initiative (Fenton & Sinclair, 1996 - 1). The MPSP is not a voluntary initiative, but there appears to be little obligation on product distributors at the current time.

There are many examples of countries which operate programs obligating industry to be active stakeholders in packaging waste programs. France, Spain and Portugal, do require municipal funding for recycling collection (depots and curbside), but they also mandate the stewards to maintain a direct financial stake in costs for recycling and disposal, unlike Manitoba. In Germany's advanced system, the industry maintains full contact with the packaging it produces, and through the designated PRO are responsible for management of packaging after consumer use. Responsibility for packaging should be maintained even after it has left the warehouse.

One of the difficulties in achieving stewardship awareness in Manitoba, is that the producers and distributors are removed from their products, figuratively and literally, once they have left the store. Remitting the levy from each container they sell, should encourage the exploration of options for better packaging forms which are not subject to the levy, or which can be re-used. Beverage producers, distributors, and all industry should be involved in finding better ways to do business, which in the end will allow them not to pay a levy on their products. By government regulating a differential levy on different containers and in fact all designated materials, the results should be indicative of stewards developing cheaper and cleaner means of doing business. Of course, this is not for altruistic purposes on their part, but to be more sustainable, and thus more profitable. This would begin with true cost accounting, which would ensure that management costs for each designated materials in the "blue box", would be recovered through some means, presumably the levy.

In Germany, the PRO sets the levies for member industries on the basis of the "polluter pays" principle. By basing fees on weight, volume and area of packaging, it is the most complicated and expensive structure in operation. Importantly, there is no one material subsidizing another material in the basket of designated goods, since the DSD has ensured that full management costs in the recovery stream are considered. Since the costs are assigned to a given industry, according to their specific packaging practices, they alone are responsible for optimizing packaging to reduce their costs and maintain competitiveness (Fenton & Sinclair, 1996 - 1). An interesting approach for stewards in Manitoba, would be to develop refillable containers, which has also happened in Germany, or other innovative means of avoiding the levy, while still promoting waste reduction and stewardship.

While we readily draw comparisons between stewardship initiatives in Europe and those in Canada and Manitoba, one must realize that there are often other important factors which are mistakenly overlooked or ignored. For instance, comparing costs related to recycling and stewardship in these different places is difficult, because while these costs are generally available they mean different things. According to Bury (1999), people often assume that Germany is the most expensive stewardship program on the planet on a per tonne basis. However, they often fail to realize that much of these costs reflect the expensive factors related to the start up of the initiative. These presumably inflated and excessive costs in Germany and other places have often been used to undermine the calls for similar programs in Canada. This is unfair and misguided. It is also difficult to understand and assess the subsidies, overt and hidden, which are supplied to business in different shapes and forms. This helps to cloud a true understanding of

the actual costs of production and management. Even more difficult is to use these numbers to try and compare them against a competing vision. It can be helpful to use costs when comparing stewardship initiatives, but they must be taken with a large grain of salt.

One of the main arguments against advancing product stewardship programs is the perceived negative effect on the industries involved in manufacturing, and of those using the products. Many authors and industry groups suggest that waste reduction and stewardship initiatives are not perceived by industry as cost effective in most circumstances, and indeed are looked upon as damaging to industry (Hawken, 1993; Van Nijnatten, 1998; Chang et al, 1998; Canadian Soft Drink Association, 1993). The OECD (1997 - 2) has found, in fact, that restrictive measures on product designs and packaging material will not negatively affect industry. It may in fact decrease packaging costs as was the experience in the Netherlands and Germany (OECD, 1997 - 2). This not only provided benefits to the environment through source reduction of packaging material, but also provided savings for industry.

As a rule, packaging only forms a small part of product costs, and as such will only have a marginal role in terms of industry competitiveness (OECD, 1997 - 2). This is not the rule for some products, such as soft drinks, which do rely heavily on packaging design and style, to maintain market share. This rule, however, is still a very important guide in allowing countries and their respective government's to determine what packaging standards are necessary for their particular circumstances. Stewardship can be implemented on an appropriate level without negative trade implications for the targeted industries, and the national economy. This finding, if true, holds promise for both Canada, and Manitoba.

There is certainly time for improvements to be made to the MPSP, and for stewards to become more responsible for their products. The levy is not called a tax, because it is not intended to penalize the consumer or the taxpayer. It is a levy which is paid by the steward to promote responsibility on their part (Manitoba Environment, 1996). Presumably this means not doing business as usual, but finding better alternatives to current practices. This should be the goal, because while the MPSP is certainly realizing positive recycling benefits, without changes in our habits we will not actually realize real waste reduction at source according to many of the stakeholders of the program.

5.4 The Role of Government

Waste management planners have faced a major stumbling block in their activities, namely the separation of responsibility between government and private business. What stewardship programs promise is a sort of reversal of roles which would see industry ultimately responsible for their products throughout its life span. In effect, they would become stewards, while governments would become the contributing partners to the stewardship program, rather than the responsible authority as in the past (Fenton & Sinclair, 1996 - 3).

When discussing the role of government in imposing further obligations to industry regarding packaging stewardship initiatives, there are certain factors which must be considered. The fact that the Manitoba market is provided with many manufactured, packaged goods which originate outside of its borders ensures some level of difficulty is encountered when attempts are made to assign

responsibility to industry. These manufacturers who do not operate within Manitoba, or even Canada in many instances, are governed largely by the international trade agreements in place to maintain an orderly marketplace. Besides this imposing reality, is the fact that many government's in Canada do not appear willing to pursue packaging waste reduction or packaging reuse.

Government's across Canada have been accused of not doing their duty when it comes to environmental protection and pollution prevention (MacKinnon, 1998). While the public appears more concerned with the strength of the economy, or the falling Canadian dollar, government's have become increasingly concerned that addressing environmental issues in any proper fashion will negatively affect international competitiveness and economic well-being (MacKinnon, 1998). The recent attempt by the federal government to eliminate the additive M.M.T. from all Canadian gasoline due to concerns about Manganese emissions affecting human health is an adequate example. The decision of the government was reversed due to N.A.F.T.A.. In this case, The Ethyl Corporation of the United States, was able to use a provision of the N.A.F.T.A. Agreement to win $25 million in damages from Canadian taxpayers, and continue the use of M.M.T. in gasoline as before (C.B.C. T.V., 1998).

Environmental issues have become exceedingly complex to act on, and in future will require better planing and management on behalf of government. The Ethyl Corporation case has implications for waste management and stewardship initiatives being carried forth across Canada. As respective government's deal with economic issues, trade agreements, and international companies operating within their borders, they may find that stewardship and natural resource matters are becoming even more ominous to deal with as we move into the next millennium.

Agreements such as the E.U. Directive on Packaging and Packaging Waste, have effectively bound countries to achieving certain minimal packaging waste reduction targets, effectively crossing international boundaries within the European market to do so. The lack of policy instruments dictating similar goals of reduction in North America has created impediments for programs operating at a provincial level. The NAPP, and the failed CIPSI venture, have not achieved a unified approach to packaging waste reduction across Canada, and this has forced provincial governments to venture alone.

One recent court case, which took place in Ontario in 1998, highlights the reluctance of the Ontario government to pursue mandated packaging reuse. The case specifically addresses the Ontario government's refusal to prosecute Coca-Cola Beverages Ltd. for not fulfilling their refillable bottle quotas as prescribed in regulation. In essence, Coca-Cola and other beverage companies did not meet 30 per cent refillable requirements, and have only been achieving a one or two per cent rate during this decade (Menzies, 1997; Claridge, 1998), contrary to Ontario law. The civil case directly targeted the Ontario government as it refused to pursue the beverage companies who were not meeting regulations, and indirectly targeted the Coca-Cola Company. The case was initiated in 1996 by the Toronto Environmental Alliance and was dismissed only recently (Claridge, 1998).

The important factor in the case was the Ontario government's position that it did not have to pursue these companies that were deliberately not complying with law requiring stewardship of their products. In essence, the government put forth the interesting position that it did not have to pursue refillable quotas if it did not wish to. Disregarding its own provincial laws regarding environmental compliance was the government's prerogative. The ramifications from this case

are clear to both industry and governments across Canada, allowing for environmental compliance to be a subjective and optional matter. This is unfortunate, in that it may allow stewardship initiatives to be a luxury rather than a necessity. The victory of the government may erode the progress already made in Ontario.

This is not to suggest that the government of Manitoba is not fulfilling its mandate, regarding the MPSP, and the overall WRAP Strategy. But, it is clear that Manitoba does not operate in isolation of other provinces, and must be aware of the national developments in stewardship and waste management practices. The same international companies that operate in Ontario are also operating in Manitoba, and are responsible for much of the beverage industry in Canada. This likely gives them resources beyond what is available to a provincial government. Policies and legislation must therefore be clear and straightforward to ensure that there is no misunderstanding regarding the goals and standards of the stewardship initiative in this province. The lack of obligations on industry at the national and international level to achieve packaging waste reduction, and the failure of a unified approach to stewardship in Canada has created a large hurdle for Manitoba to overcome in implementing and expanding an effective "made in Manitoba" solution to waste.

5.5 The Beverage Industry & Containers of Choice

Due to the singular reliance on beverage containers for providing the funding for the recovery programs of the MPSP, it is important to point out and discuss some of the significant developments regarding beverage containers and

their marketing in Manitoba, and elsewhere. The options for reuse and reduction of these containers is important in the Manitoba context, given the objectives of the MPSP to promote and follow the three R's. The evolution of beverage containers has also had an impact on the stewardship initiatives in place today.

Pic-a-Pop Beverages, a Winnipeg company, had been providing soft drinks to Manitobans for many years, as had other players including the Pop Shoppe (originating in Eastern Canada). This was before their recent demise due to the low prices of their competitors drinks, namely the famous name brand beverages, and the store brands (C.B.C. Radio One, 1998). Pic-a-Pop, the last of the local bottlers, has now sold off its assets and bottling equipment after closing down operations for good (Winnipeg Free Press, 1998). The closure is the result of an inability to compete with these lower prices from the big bottlers. This despite the fact that the product was of excellent quality, and the flavours available were more diverse than any other company offerings. These local bottlers offered unique beverage flavours, various bottle sizes, and many locations and depots across the province to pick up and drop off containers. Unfortunately, it was not enough to stave off a trend towards cans and large, convenient one-way plastic containers at lower prices.

There is a similar story regarding beer which until recently, due to free trade agreements, and the reduction of inter-provincial trade barriers within Canada, was brewed and bottled within the province it was sold. This meant that there was often a brewing and bottling plant for each beer company in every province (Crittenden, 1997). Due to the fact that beer companies began merging in the 1970's, there is now only two major players remaining in the Canadian market today, Labatt's, and Molson. They have also greatly reduced their previously

expansive network of plants. Both companies have closed their manufacturing and bottling operations within Manitoba. This type of concentration of production is common in the soft drink industry as well (Menzies, 1997). Similarly, there are only two major players in the North American soft drink industry, PepsiCo, and Coca-Cola, who also happen to be the dominant companies worldwide. This concentration has allowed these two companies to have a great deal of influence in both the marketplace and the political arena, and they are not afraid to ensure that they are heard (CBC T.V. 1998).

The beverage container of choice in Manitoba has changed quite remarkably over the last few decades, as they have across the rest of the country and the United States (Crittenden, 1997). In Canada, from a 100% market share in 1958, the refillable beverage container's market share has plummeted to a dismal 3% share today, while the number of bottlers has fallen to one-sixth their past level (Crittenden, 1997). While there are many reasons for this turnabout in fortunes, the role of the soft drink industry is of primary importance in this picture. This helps to explain how refillables have basically been defeated as the container of choice in North America. Convenience and cost at the point of sale have become the important considerations regarding sales numbers (Menzies, 1997). Governments and consumers have also played a role in this development and while it may be easy to simply lay blame for where we are at this moment, it is important to understand and learn from what has taken place in order to develop effective stewardship programs today.

The evolution of refillable to non-refillable containers in Canada has been an obvious influence on the national landscape in this country. The heavy reliance of the provinces on beverage container initiatives for reducing packaging waste,

has reinforced this change. While all Canadian provinces operated some sort of deposit-return systems for glass beverage containers in the past, the advent of light, plastic, one way containers, and aluminum cans basically brought an end to these programs. Beverage company operations were centralized, costs of production were reduced, and the relative price of pop decreased (Crittenden, 1997). The benefits of this change in the last thirty years has largely fallen to the beverage companies who have increased sales, and end up saving money from not being true stewards of their packaging.

It is much too simplistic to place responsibility at the feet of the large soft drink companies for the lack of refillable beverage containers in Canada. It is government which has been responsible for the set of rules which currently exist in Canada. Manitoba and Ontario are two examples of governments not ensuring beverage companies live up to their performance requirements under the law. This is the case, even though some performance fines have been levied under the law (Helson et al, 1992).

Beverage fines accumulated in Manitoba were forgiven by the provincial government in 1994 when the soft drink companies failed to meet container recovery targets as specified in the Beverage Container and Packaging Regulation under the WRAP Act. Through lobbying and intense pressure applied by industry groups, $863,000 owed to the province was waived in order to ease the industry into the new MPSP Program which began soon after, in the beginning of 1995 (Krueger, 1995). According to the regulation, fines of 1/10 of one cent per container were to be paid by the industry for not meeting recovery targets for their empty containers. While some $500,000 had been paid by the industry for not meeting previous targets, there was a new approach proposed by the beverage

industry (Manitoba Environment, 1996), which led to CIPSI negotiations, and ultimately the MPSP.

While the government did state that the loss of the $863,000 was more than replaced by funds collected under the new levy (Manitoba Environment, 1996), this explanation misses the logic of instituting the penalties in the regulation. The fines accrued because beverage companies failed to meet specific obligations as producers of packaging, to recover that same packaging from the waste stream. Presumably, these fines were not intended as a tax but as an instrument to encourage waste prevention and stewardship on behalf of industry. In 1993 it became known that there were difficulties with the beverage container regulation, as some assessments went unpaid, and one-third of companies registered did not submit WRAP plans as required (Manitoba Auditor, 1993). Rather than address the shortcomings in enforcement policies and procedures as suggested by the provincial auditor, the government seemed to abandon the system in favour of developing a new agreement, through the CIPSI process.

The important aspect of the failure of the beverage companies to meet their quotas, was the reliance of the industry on a proposed multi-material recycling program, in place of the recovery targets for its containers. This "end of pipe" solution allowed the beverage industry to become responsible for only part of any future recycling programs. This was certainly reinforced by the forgiving of the fines against the beverage producers.

There are no standards in place, regulating the types of containers which can be sold in Canada, apart from those in P.E.I.. Beverage companies have been able to choose one-way containers based on the attributes of being marketable and

efficient for their operations (Crittenden, 1997). While this appears at first glance to be an efficient, and effective development in lowering the costs of soft drink production and marketing in Canada, these same packages are often left for municipal taxpayers to dispose of or recycle after their initial use. There is no obligation on behalf of industry for upholding certain take-back provisions in Manitoba. The payment of the levy is supposed to represent the degree of responsibility for which distributors pay for a portion of the costs for packaging recovery. However, the open commitment made by retailers to simply pass on the levy to all consumers, effectively removes industry from having a stake in the program. Without obligations which promote responsible action such as take-back or waste prevention provisions, on behalf of industry, the concept of "polluter pay" is not being followed.

Germany and many other countries have refillable quotas, or established systems of providing beverages to consumers using refillable containers. As part of an overall scheme to divert packaging waste, German industry has increased the percentage of beverages in refillable containers to 74.5%. This development has taken an enormous amount of pressure off beverage companies, since they are already achieving a high diversion rate for these products, and a system is in place. Coca-Cola has been using returnable and refillable PET bottles in Germany, Switzerland, the Netherlands, and Norway for much of this decade. The results have been quite positive as consumers have accepted the concept, and it allows the company to save money by largely opting out of government mandated recycling programs. The containers, which contain a minimum 25% post-consumer recycled content, have earned the company many awards for innovation and achievement (Saunders & McGovern, 1993). It is confusing why, given this available

technology, that the soft drink companies in Canada have resisted calls for refillable bottles (Crittenden, 1997).

In Manitoba and much of Canada, the loss of bottling lines for refillables, and the move towards even more one way packages in the system has allowed the beverage companies to be far removed from the management of their packaging. They literally do not see it again. It may be too late to reinstate refillable quotas, as a step in linking industry to the waste associated with their packaging. Refillable bottle use in Manitoba could make a positive contribution to waste reduction goals. The important point is that refillable bottle quotas are a useful means of ensuring that industry fulfills certain obligations to minimize packaging, reduce waste, and maintain responsibility. German companies have used refillable bottles as a means of saving money because the calculation of true costs dictates that using these could be cheaper than recycling one way bottles. The future implementation of true cost accounting by the MPSC, and further obligations assigned to stewards, may make refillables a more desirable option to industry than the one way packaging now prevalent in Manitoba.

5.6 True Cost Accounting / Life-Cycle Analysis

The MPSC has always had full intentions of exploring better methods of internalizing the costs of packaging into the product price. True cost accounting has been touted by the MPSC since the first business plan as a means of achieving more responsible packaging. While this is a "long term objective" of the corporation, it would help to ensure that (MPSC, 1997):

1. recycling and waste reduction programs are economically sustainable;
2. product stewards pay their fair share of system costs;
3. product stewards can determine best packaging strategies; and
4. consumers can make choices based on the cost of packaging.

To achieve the goal of incorporating this accounting method in the program, the MPSC has been collecting data in order to track the costs of managing designated materials throughout the current system. This will help to associate costs to all materials. By then assigning these known costs to the stewards through their products, each package in the system will be somewhat accountable in terms of its impact on the program. True cost accounting is not slated to be applied to packages until at least 2002, and there is no schedule of deployment. The MPSC will continue to collect data on costs, through municipal cooperation and stakeholder input (MPSC, 1997). This method will ensure package costs more closely resemble their true costs including the cost of package management within the system of collection to recovery or re-use. But it does not include environmental factors or social impacts.

The concept of life-cycle analysis goes beyond true cost accounting towards full cost accounting. By measuring the environmental impacts of a product through its entire life, one can better understand the full costs or impact which a given product or package demands. For instance, while aluminum cans are very profitable as a component of the blue box mix of materials due to the high value of the metal, the cost of producing aluminum does not adequately reflect the production costs of the package. Bauxite mining is an expensive process, in terms of environmental degradation. Furthermore, the electrical requirements to process the ore are very high (Baarschers, 1996). Aluminum as a material would be more

suitable as a long-life component of aircraft, rather than beverage containers. While these cans are recycled many times over, in order to make some use of the valuable material, the final costs of the package do not represent adequately the costs to make it from the raw resource. Applying full-cost accounting to aluminum production, would certainly make it cost-prohibitive (Baarschers, 1996).

The MPSP has discussed the rationale of using full cost accounting, but it appears unlikely this would occur for many years. This certainly goes beyond the true cost analysis which it currently is struggling with as a means of prescribing actual costing to packages. The benefit of these accounting methods is that if it is reflected in the price of the product on the shelf as it should, the consumer has a tool to guide decision making, and make an informed purchase. This provides feedback to the steward, and by catering to customer choices, it will allow for efficient, and more easily managed materials to become the consumer's likely choice. Consumers will make the most appropriate choices when given the information they require to do so (Hawken, 1993).

The internalization of costs is only a minor step to achieving full packaging stewardship (Fenton & Sinclair, 1997), but it would be an important step for the MPSP in ensuring accountability. Life-cycle analysis is critical in order to apply appropriate differential levies to all products (high levy = high environmental impact), and may be instituted without full knowledge of impact. In other words, even a "rough and ready" approach is better to implement in many cases, in order to provide some insight into the true costs of a product and its package (Fenton & Sinclair, 1997).

In the Netherlands and Germany, there has been research to determine the impacts of certain packaging components on the ecosystem and assigning costs based on these impacts. In the Netherlands, the concept of life-cycle analysis has been employed to assess all environmental costs. This is combined with market economic analysis to assume cost/benefit estimations on market impacts of certain actions. This is a lengthy process which is steered by many stakeholders, and takes considerable time and effort to reach a conclusion. However, the benefits are a real and measurable assessment of packaging which can be used by industry to voluntarily choose the least damaging and most efficient option (OECD, 1997 - 2). Life-cycle exercises have proved important in achieving waste reductions without a mandatory program being implemented. In Germany, life-cycle analysis has been explored for specific containers, beer and milk, and has allowed for comprehensive assessments of the packaging options and their impacts (Oels, 1995).

Life-cycle analysis and true cost accounting tools are important instruments to measure environmental impacts, and for allowing these impacts to be included in some manner in a product's pricing. In fact, life-cycle analysis reporting obligations are considered one of the three essential elements of packaging stewardship policy (Fenton & Sinclair, 1996 - 1). While it is being used with success in some international programs, these initiatives are more developed than that of Manitoba. This does not suggest that these tools cannot yet be employed in Manitoba, but it may take considerable time and investment of resources, which is more than the corporation or government is prepared to invest at this time. A positive initial step would be to employ true cost accounting as a means of accomplishing variable levies on the eligible packaging and products sold and

collected by the recycling programs. This must be a goal in the future to establish the MPSP as a true stewardship initiative.

5.7 National Perspective and Cooperation

In light of the current situation in Canada, with respect to the advent of independent provincial stewardship programs, there is little doubt that supporting a program national in scope would be difficult. In Germany and the Netherlands, the stewardship initiative began as a national program and was put into statute by the Federal authority. The situation is somewhat different from Canada. For example, geography and the relative isolation of some of Canada's provinces compared to those in Europe, and the sparse distribution of people in Canada create some inefficiencies in the transportation and distribution of materials (Baarschers, 1996). In essence, transporting heavy old newsprint or glass cullet, or voluminous plastic pop bottles thousands of kilometres to potential markets is expensive.

Even if a majority of materials collected in multi-material recycling programs is processed locally, the economies of scale are not present. This makes collection in isolated communities difficult and forbidding. The main point is that circumstances vary from one country to another. This is not to say that a national program would not be beneficial in Canada, but it may help to explain how we have become so diverse in approaches to packaging waste. One should note that in Manitoba, approximately 80% of designated materials retrieved in the recycling system stay within the province to be recovered or re-used in some fashion (Fogg, 1999). This is a positive statistic, and through further developments of local use

and re-use options will help to make Manitoba more self-sustainable. The MPSC (1997) has set a goal of improving the local markets for the recyclables collected in municipal programs, and this leads one to assume that the above statistic will improve.

As noted previously, Canadian governments in recent times have had difficulty grasping and directing solutions to increasingly complex environmental and resource matters in this country. Evidence documents specific government negligence in asserting its presence in many important matters including pollution prevention (Commissioner of the Environment & Sustainable Development, 1998). Apart from this, there are achievements at the provincial level, which should be noted. Cooperative and consultative processes through the National Packaging Protocol, and the CCME have allowed for a sharing of resources amongst the provinces. By developing packaging and waste reduction policies there is improvement being found and achievements at the local levels which can be used as a stepping stone for instituting stewardship. Provinces including Manitoba, B.C., Quebec, and Nova Scotia have embarked on stewardship initiatives in isolation, to assert the will of the public. Progress has been made in Canada, and through further discussion, and consultation amongst the public, industry, and government, it is hoped that a culture of awareness will develop to help us meet the challenges of waste reduction, and stewardship.

Given these developments, the great tragedy remains the lack of a national program to achieve a standardized approach to stewardship, as in Europe. According to Fenton & Sinclair (1997) there is hope in the future for stewards to form a PRO in Canada to be the responsible organization for all packaging materials, as in European nations. While this would require difficult negotiations

in order to standardize Canadian rules, it is a distinct possibility. The ultimate goal could certainly be a standard approach to stewardship through N.A.F.T.A., or even the O.E.C.D., which would encompass many nations not just provinces or states within those nations (Fenton & Sinclair, 1997). This appears to be a difficult goal to reach at first glance, but with the developments in recent times of standardized rules for trade and commerce, it does not seem too outlandish to assume that this may be a task that can be achieved. Through an existing organization such as the Commission for Environmental Cooperation, set up under N.A.F.T.A., a North American framework for packaging reduction and stewardship could conceivably be developed. The current variety of management approaches at the provincial and state levels in Canada and the United States are imposing, but likely not insurmountable.

Ironically, the desire to impose national standards for packaging and waste reduction may be in contravention of the N.A.F.T.A., and other trade principles which require a level playing field for business. The imposition of packaging requirements or differential levies on a national scale may hinder the "competitiveness" of certain sectors of the economy, clearly against the rules of N.A.F.T.A. (Anderson, 1993). This can lead to trade sanctions, and penalties which would disrupt the economy, and put into jeopardy any progress made. However, these issues are unclear, and have not been adequately tested to determine how strong the linkages are between environmental protection and trade. The E.U. Directive on Packaging is considered a very progressive initiative, which manages to direct member states to harmonize packaging waste efforts, while ensuring no obstacles to trade are put in place. By having one approach for packaging waste reduction for many countries, progress can and must be achieved by the individual states to remain competitive in the market, and to avoid sanctions

by the central authority, the European Parliament. Protecting the environment and reducing waste are the main objectives of the directive, which maintains the authority to impose waste prevention provisions on member states not in compliance. The E.U. has made packaging waste part of the cost of doing business.

According to Anderson (1993), given the uncertainty of past trade practices, agreements allow for more clear defined rules to be put in place which can actually benefit the goals of pollution prevention, and other environmental measures. This is an interesting view, but is not reinforced by current experience, including the M.M.T. debacle which cost the Canadian taxpayers $25 million, and forced the reversal of an important government decision regarding the potentially harmful substance. The N.A.F.T.A. agreement effectively put a straight-jacket on the Canadian government in this case.

With or without international trade agreements in place, the federal and provincial governments must try and establish national standards and rules for packaging and other materials. The provincial governments are attempting to go it alone, and while this has direct benefits for each province, it is inefficient as a nation to employ different standards and levies for the same products. The difficulty lies with the lack of power at the national level to impose policies on the provincial governments. Therefore, the provinces must develop and maintain waste reduction efforts largely on their own. To be fair, business as stewards of packaging, should be treated the same across the country in order to be more efficient and effective. Without a consistent approach, costs will increase, and consumers will be faced with higher prices for the products they purchase, passed on from industry (Canadian Soft Drink Association, 1993). In the end, it may be

complicated and difficult to approach and solve this issue, but national standards will provide benefits in the long run for all Canadians. The most difficult issue to resolve in the end may be the need for a common policy approach. Provincial governments may have to give up some of their authority in this area, and confer powers on the Federal government to allow for the formation of a central waste policy. The NAPP was a means of bringing together the respective governments in discussing waste policies and procedures, but this effort, regardless of its effectiveness, has now been terminated. The Federal government needs to take the lead in a new national stewardship effort, and ensure a common approach is adopted.

5.8 Voluntarism versus Regulation Strategies

Regarding environmental and natural resource policy matters, there has often been a debate concerning the means by which governments and society can achieve certain goals. Business interests are typically at odds with these public goals. Business must adapt or modify their actions in order to meet these goals, and in the end, the result may or may not be suitable to all parties. Through the late 1960's and 1970's in Canada, there had been an emphasis on government legislation, in an effort to control what was perceived to be the harmful effects of overzealous business and industrial activities on the natural environment, and the wasteful exploitation of resources (Burton, 1972). Respective government's would ascertain to control industry through specific legislation which contained their activities to certain limits. Through this approach, the relationship was strictly an adversarial one. In other words, it would be command and control of business

activities, or at least command, since the control aspect was typically and still is often lacking.

Today this relationship between the two parties has mellowed somewhat. Governments and business groups (with some exceptions) have learned to live together in a more harmonious relationship, simply because it is better for business (Saunders & McGovern, 1993). This more friendly atmosphere is often described by progressive terms including: "partnerships"; "consensus building approach"; "harmonization"; "encourage"; and "cooperation". These cooperative approaches, are a means of avoiding the strict adversarial relationships that have predominated many environmental and natural resource issues in the past (Environment Canada, 1996). Some consider this new style to be highly controversial and very detrimental to the cause of resource and environmental management, when it becomes too friendly an approach, or a prerequisite to any agreement (Chang et al, 1998; Clark & Winfield, 1996).

Governments claim they are able to stretch financial resources farther through a cooperative approach rather than the "command and control" attitude of previous decades. In some cases they have even decided to override or ignore their own laws, in an effort to come to an agreement with industry. Such a case was documented when the Manitoba government forgave $863 thousand in unpaid WRAP Act fines, levied through the Beverage Container and Packaging Regulation (Regulation 174/93). The fines against the companies were apparently forgiven in an effort to avoid a confrontation, and gain their cooperation in the MPSP (CBC T.V., 1995). This approach ultimately did provide real benefits through the formation of the MPSP. It is difficult to interpret what may have happened had a less conciliatory approach been taken by the government.

The change in government approach towards industry when dealing with natural resource and environmental matters has carried into the area of product stewardship and waste management. Two different focuses have emerged which are, in simple terms, used to describe the often polar approaches regularly taken. Both will be addressed here in an attempt to shed light on how they affect stewardship and waste reduction and prevention initiatives. One is "voluntarism", and the other is "government regulation".

Voluntarism in simple terms suggests that a certain business or industry association group takes it upon themselves to enact or implement certain changes in their activities in order to reach a desired goal. In broad terms, this may mean a voluntary reduction in carbon emissions while making a product, for example. In terms of packaging stewardship it would suggest a voluntary program to reduce or prevent waste associated with their product packaging. The most important element of voluntarism is that it is not dictated by government as a means to control industry. Therefore, it is a voluntary initiative undertaken by industry, that may or may not result in direct benefits to the public. However, a government may set certain goals which are to be achieved through means determined by a given industry.

Critics of voluntarism appear to believe that it is a type of smoke screen which industry, and industry association groups can, and have used as a means of deflecting criticism. The goal is to show the public that they are in fact becoming more environmentally friendly. On the other side, it can be said that governments can also benefit from this practice, since they are able to display to the public that governments and industry can work together to progress such issues as

stewardship and pollution prevention for the benefit of the country and society. All this being accomplished without the heavy hand of direct government intervention and the tying up of government staff resources to ensure that all objectives are met by the targeted industry. One criticism of the approach of government and business to develop voluntary initiatives, is that non-governmental organizations as third parties are often not consulted or included in any of the debate or decision making process (Van Nijnatten, 1998). In this way, results of any initiative cannot be verified independently.

With respect to the regulatory control of corporate activities, this method has seen a sharp decline during this decade. With the advent of voluntary initiatives, has coincided a wave of government cutbacks and a pulling back from enacting regulations and laws (Lynes & Gibson, 1998). This type of regulatory control in Canada is also known as "Command - Penalty Instruments". Legislation of this type usually sets out a series of offenses, authority to issue licenses, and enforcement powers on behalf of the state (Webb, 1990). Between 1994 and 1996, the Federal government cut 1,400 jobs at Environment Canada, and reduced their budget by $235 million, hampering the department's ability to monitor industry and properly carry out its mandate (Council of Canadians, 1996). These actions by the government are correlated to a voluntary approach taken towards industry on environmental matters.

Canada's national stewardship initiative, The NAPP, is a purely voluntary approach. It relies on business, industry, and the federal and provincial governments to take a role in the development and function of packaging principles. When one compares this type of initiative with that in Germany, where the Green Dot program is in place, it is easy to recognize that the main difference

is the mandatory nature of German stewardship. In fact, all that really differs is the means to the end, in that while one is mandatory and the other voluntary, both recognize reduction as the paramount objective (Fenton & Sinclair, 1996 - 1). The important aspect is that these two initiatives represent the opposing approaches to environmental matters, voluntarism and regulation.

Seeing the inadequacies of pure voluntarism or strict command and control legislation, what is presented as a necessary approach by some advocates is a mix of the two. This would achieve results that will benefit all parties, and be beneficial for the environment, and resource protection (Lynes & Gibson, 1998). The real benefit of regulation may be that it is a tool always available and at hand to governments who are willing to use them, but may not need to. In essence it is a looming threat that can be employed if industry is not acting responsibly or in the public interest. In fact, the threat of regulation may be the most powerful tool in achieving desired results or in achieving consensus in negotiations on a voluntary initiative (Lynes & Gibson, 1998). Business often becomes concerned that it is be being regulated into oblivion, and sometimes governance seems as if it is spinning out of control (Hawken, 1993). The challenge is to redefine this relationship and solve these malfunctions. One must not forget that government's original purpose was to set standards in the community, and to act as a guardian (Hawken, 1993). This is still as important today.

The instruments used by government to promote responsible behaviour on behalf of industry are irrelevant, as long as progress is achieved. Industrial interests, whether they be: resource companies; distributors; manufacturers; or retailers, are keys to the successful development of stewardship. Industry is crucial in the development of stewardship, but information is the means by which

their role is defined. Life-cycle information, and full management costing, are difficult to determine, but efforts in Germany and the Netherlands are leading the way. By taking steps to improve the information known about a given product, and its full costs to develop for the marketplace, stewardship becomes a more realistic goal. Improving methods of accounting to progressively include more of the costs of production of materials and their packaging, allows for these costs to be included in the eventual price of the product on the store shelf. When consumers are faced with more relevant pricing, reflecting the full value of the resources used, they can make important decisions based on value, rather than irrelevant price points.

Packaging stewardship is actually a feedback loop involving consumers, industry, and government. The Netherlands has ensured responsible parties contribute along the "product chain" to reduce or recover packaging waste. This is an effective example of responsible action. Government must provide the necessary conditions and catalysts in order for industry to develop full, or more appropriate, costing. The extensive research conducted in the Netherlands on Market Economic Analysis, and Life-Cycle Analysis, has allowed for better interpretation of all necessary costs along the products life. Industry should produce goods which are effective and efficient in light of the costs of production. Consumers may make purchases based on personal preferences, but when faced with full costs, they are provided with more complete information that allows them to make responsible and informed choices. Wasteful packaging practices would likely be reflected by higher retail prices, due to the consideration of after market recovery, reuse, or landfilling costs. Including the market externalities in product pricing is an essential element to stewardship, because consumers will be capable of demanding more sustainable products or packaging. This is due to the existence

of the appropriate feedback mechanisms. Just as it is important for industry to reflect the full costs of production, so too is it important for consumers to be responsible for their actions. Taxes, in many communities, do not reflect the individual purchases made, and choices of consumers, and their waste habits, and therefore are not reflective of stewardship. Once consumer's start paying for disposal of their waste in a direct form, rather than through taxes, any existing waste problem will soon be solved (Crittenden, 1997).

Whether voluntary or regulatory measures are used to provide an impetus to begin the development of the above mentioned feedback mechanism, they must somehow be developed. The most effective stewardship enterprises have obligated industry to contractually meet certain objectives. This has provided the necessary movement within the marketplace to allow prices to more fully reflect costs. There may be voluntary initiatives that can accomplish these same goals, given the right circumstances. The method of action is not as important as the results obtained.

Chapter 6
Summary, Conclusions and Recommendations

6.1 Summary

Companies traditionally have not considered the waste-creating consequences of the production, distribution, and consumption of their products. It has been left to government's and the public to manage and plan for the waste produced by these private decision-makers (Fenton, 1993). This trend, while being curtailed somewhat in recent times, has for the most part, continued in many regions of the world. What has changed most dramatically is the realization on behalf of consumers, government, and industry alike that there must be new ways of doing things. The MPSP is an initiative intended to address distributor responsibility, and promote the expansion of recycling services in Manitoba (MPSC, 1998). The MPSP is also a component of the Manitoba government's WRAP strategy to decrease waste on the order of 50% by the year 2000.

In Canada, provincial governments have offered recycling and deposit-refund initiatives that have institutionalized blue boxes and depots in many communities across the country. There are drawbacks to these government subsidized programs that endorse recycling over reuse and reduce initiatives, that are more proactive. Markets for recyclables are often cyclical and extremely volatile. This leaves municipal governments which rely on revenue from these materials, forced to retreat to tax dollars to subsidize recycling programs when there is a market downturn. Rather than endorsing the concept of "polluter pays", the reality in Canada has more often been "taxpayer pays".

A chronic obstacle to waste reduction initiatives is the constant stream of products and packaging offered to the public without a vision to the resources being consumed. The costs to produce, distribute, and manage the post consumer packaging materials in the waste stream is not properly considered. This lack of attention to social and environmental costs is simply not stewardship. So-called packaging stewardship initiatives across Canada are based mainly on deposit-refund schemes through beverage containers in order to fund any existing forms of recycling. Manitoba, while unique in using container levies to fund multi-material recycling, is no different from the other provinces in using revenue from beverages to fund packaging diversion programs. For all practical purposes, Manitoba's MPSP is not a true stewardship initiative, and compares unfavourably to those initiatives in Europe. There are numerous reasons for this reality which cannot necessarily be considered the fault of those directing the program, including:

- the lack of national stewardship infrastructure and guidance;
- the small population, and expansive territory of the province;
- breaking ground as the first provincial stewardship program; and
- the inability to control products and packaging produced elsewhere but sold in Manitoba.

The above elements have combined to cause uncertainty in Manitoba, and are not insignificant factors in creating the present circumstances. Guidance at the national and international level has spurred broad, comprehensive initiatives in Germany, the Netherlands, and many other nations in Europe. By most accounts these programs appear to be achieving their goals, and have become popular with citizens. Cheap landfill costs, and plentiful natural resources have allowed

Canadian provinces the luxury of watching and waiting as other jurisdictions test the somewhat uncertain waters of packaging stewardship.

There are many challenges facing Manitoba, and the further development of the MPSP. Manitoba's Deputy Minister of the Environment sums up the status of the program in regards to stewardship: "...I'll be the first to admit we're far from the theoretical ideal..." (Brandson, 1998). This is an accurate description of stewardship progress achieved to date in Manitoba. Stewardship faces many challenges and pressures, as the MPSC, business, and government continue the work to institute further stewardship components into the program as planned. The lack of public participation in the process may reflect the lack of understanding apparent among most Manitobans. The public does not understand the goals and principles of the MPSP, or stewardship.

Manitoba desires to "maximize reduction and recycling of designated materials..." (MPSC, 1997), without the obligation of formal targets or specific responsibilities on behalf of stewards to become active in reducing, reusing, or recycling their packaging. Targets are not only set, but are largely being achieved in Europe, and while there may be waste diversion taking place in Manitoba, a lack of formal targets or obligations makes it more difficult to measure progress and achievements. The realization that manufacturers not only sell products, but also the packaging associated with those products appears to be an important step in the development of stewardship principles. The responsibilities and duties assumed by industry in the sale of these material goods has not yet taken hold in Manitoba, as it has in Europe. The reasons for this appear to be varied, but the main impediment may be the lack of a national approach, which would allow Manitoba to act as a partner in a larger scheme, rather than as a trailblazer.

Packaging stewardship in Manitoba has taken some initial positive steps through the effective management framework that has been developed. The basic structure of the program is in place, which will ease further development of new program facets. Unfortunately, the MPSP does not operate in isolation, and outside factors and influences will continue to impact the decisions made here. The challenge is to maintain an effective stewardship program given the current realities in Manitoba. The MPSC cannot achieve the task it has been handed alone, and must be provided with the necessary tools from the Manitoba government to achieve some real sense of distributor responsibility. There are real examples, and elements of stewardship for Manitoba to learn from. There must be, however, the will on behalf of the government and the MPSC to adopt them, and adapt them to fit the Manitoba experience.

6.2 Conclusions

Objective one

Packaging Stewardship is a term that encompasses many facets of responsibility. In essence, each country or region has developed new terms but the intentions are the same. Producers become responsible, in whole or in part, for the products they deliver to the market, after the consumer has used it. Whether it is called Extended Producer Responsibility, Shared Product Responsibility, Chain Responsibility, or Product Stewardship, the intention is the same. These terms imply new ideas or better methods of achieving responsible conduct on behalf of industry or specific sectors within these larger collectives. In most cases it is not the term that is important but the achievement. In Canada, packaging stewardship

has evolved from being the responsibility primarily of industry, towards a more cooperative approach including government, and consumers. Stewardship dictates that consumer products should eventually reflect the social and environmental costs incurred to make a given item. The inclusion of these costs in a product will then allow the consumer, rather than the taxpayer, to have full knowledge and the appropriate responsibility for their purchases. The consumer role is then to provide feedback to industry as stewards to provide cheaper, better, and more benign packaging choices. The MPSP has yet to fully come to terms with this concept. At present, packaging stewardship is not evident in Manitoba, but the framework is in place. Through dedication, cooperation, and government action, the principles of packaging stewardship may yet surface.

Objective two

The MPSP has developed largely from the Canadian Industry Packaging Stewardship Initiative (CIPSI) process in Manitoba. Through CIPSI negotiations, as proposed by the Grocery Products Manufacturers of Canada and the Manitoba Soft Drink Association, the Government of Manitoba attempted to negotiate a multi-material recycling program in the province. This was intended to be in lieu of continuing mandatory beverage container recovery performance standards, imposed on industry. This process of CIPSI negotiations between 1993 and 1994 did ultimately fail, but in June of 1994, the Manitoba government announced the Manitoba Product Stewardship Program. The similarities with the CIPSI proposal were unmistakable. One difference was the funds generated through a levy would be operated at arm's length from government by a board of directors, rather than the industries themselves. Long before the CIPSI proposal, the Manitoba Recycling Action Committee in 1989 suggested that distributors become responsible for

minimizing the impacts of waste generated from their products. This helped to form the basis of the WRAP Act, and WRAP Strategy, which helped to formalize the public policy goals of waste reduction and distributor responsibility. The Interim Measures Regulation was put in place in March of 1995. This Regulation is the pillar establishing the main components of the MPSP, including: the Manitoba Product Stewardship Corporation (MPSC); the Multi-Material WRAP Fund; the levy system on beverage containers; and the requirement of a new business plan for MPSC operations every three years.

Objective three

Determining the strengths and weaknesses of the MPSP, based on the research conducted, was an important objective. These specific items are identified below:

The Strengths of the MPSP

- the expansion of recycling to 90% of Manitobans;
- stable funding of multi-material recycling programs;
- advancing the concept of distributor responsibility and stewardship;
- increasing the diversion of waste material from landfills;
- bringing together stakeholders to promote and develop waste reduction activities; and
- promotion and awareness of alternatives to landfills.

The Weaknesses of the MPSP

- no levy redistribution;
- beverage containers are levied independent of volume, or material constituents;
- voluntary municipal participation;
- taxpayer contributions necessary for municipal programs;
- no evidence of packaging reductions / re-use as a result of the MPSP;
- consumers role is misunderstood;
- lack of emphasis on reduction & re-use alternatives;
- MPSC role limited by government;
- performance targets lacking;
- stewards not modifying practices; and
- levy is applied independent of management/social/environmental costs.

Objective four

One can look to other jurisdictions where packaging stewardship has progressed further than Manitoba, in order to understand and learn from their accomplishments and mistakes. With credit to Manitoba, attempting to achieve a stewardship approach to packaging and packaging waste in isolation of a national program will likely prove difficult. The progress achieved to date with the increasing recovery of designated materials is important, but the MPSC Business Plan proposals are not being met in some important areas. The MPSP has brought on comparisons to other stewardship programs simply because of the expectations that have been fostered among the public and stakeholders. The bar was set by the corporation and the government itself, and many stakeholders are now anxiously awaiting for new developments to unfold as proposed.

The biggest change in the countries which initiated stewardship programs in Europe, is that they seem to have instilled a new method for modifying manufacturing practices, and changing corporate attitudes. This is an important element which may not be immediately evident in quantifiable results, but will surely encourage packaging reductions in the future, as industry finds better means of producing and packaging goods. Packaging reductions are being realized in Germany and the rest of Europe in a very short time frame, due to the fundamental shift in approach to waste management and the belief in the "polluter pays" principle. A specific contractual obligation, committing industry to reducing or valorizing packaging waste, has been a critical tenet in the achievements of packaging reductions and recovery in Europe. Industry, government, and the public have "bought in" to the principles of stewardship in order to achieve waste reduction. Essential elements of stewardship: take-back obligations; waste-prevention obligations; and life-cycle obligations, are important features of successful initiatives, which others should strive to implement. While these elements are not contained in all global stewardship initiatives, the most successful and progressive ventures have been able to deploy these elements to some degree, including Germany and the Netherlands. These elements can be modified and adapted to further the development of stewardship principles in Manitoba.

6.3 Recommendations

Objective five

These recommendations, drawn from an analysis of the information and materials collected through the literature review and stakeholder survey, are

offered to encourage the further growth and development of the stewardship program. A portion of the responsibility for the future direction and management of the program falls to the directors and staff of the MPSC. The Manitoba government, through the Minister of the Environment, holds the regulatory powers, which provides the framework under which the program operates. Given this reality, fulfillment of these recommendations will require action, and some level of cooperation on behalf of both the government and the MPSC.

1. ***Levy redistribution must occur in the very near future, and become more reflective of the nature of the material, volume and weight of packaging targeted.*** This will increase the number of stewards supporting the recovery of designated materials, and will help to reduce the free rider problem, which currently exists.

2. ***The levy should continue to apply to beverage containers, but should become variable to be more reflective of the costs associated with each packaging type.*** At present, the levy is arbitrary. Making it variable will allow consumers to make appropriate decisions at the retailer, and provide "signals" to the producer and distributor. Greater management costs = greater levy.

3. ***MPSC should explore the viability of refillable beverage container requirements, in consultation with the public and industry.*** The technology is available to employ light and efficient packaging in a modest program to reintroduce refillables into the province, as a means of reducing packaging waste outside the direct scope of the MPSP. Refillables are being used successfully in other jurisdictions, including P.E.I..

4. ***A greater degree of cooperation and information sharing must develop between the MPSC and all stakeholders, namely the participating municipalities.*** There is a strong indication that miscommunication, and misunderstandings have helped to discourage some of the recycling opportunities in the province. This may include the current lack of service to multi-family dwellings in Winnipeg.

5. ***The Manitoba government must continue to provide leadership in developing stewardship in Manitoba.*** The necessary regulations, and amendments, must be drafted in consultation with the MPSC to allow the program to develop as it was intended. Business plan proposals have been delayed too long. The MPSC may need more tools to do its job.

6. ***Stewards and industry must be encouraged to "buy-in" to MPSP program goals.*** There is a lack of understanding surrounding the actual role business plays in the program, apart from the select few sitting as MPSC directors. The current emphasis of the program does not adequately focus on the polluter pay principle. There is no evidence of packaging modifications as a result of the program. There must be an obligation towards industry to become involved in the process. An alternative approach to promoting distributor responsibility could be to offer awards and public recognition for the best corporate citizens. Industries, which actively reduce waste, and promote stewardship, would be recognized publicly for their efforts. Another potential problem is the fact that the levy on beverage containers is allowed to "pass-through" from distributors to consumers. This action on industry's part could be banned in order to promote some greater level of responsibility on behalf of the packaging industry and distributors.

7. ***True cost accounting research should continue, and, in time, be implemented in coordination with an expansion of the levy system.*** Costs of products must become more reflective of the actual costs associated with the management of the packaging waste.

8. ***The Government of Manitoba and the MPSC must work through available channels to push for national standards and a common approach to stewardship.*** The goal will be to enhance sustainability, and allow efficient movement of goods, while ensuring national stewardship principles are actually put into operation at the provincial level. This may involve revitalizing the NAPP process and moving beyond the progress achieved to date.

9. ***Future amendments to the MPSP and the mandate of the MPSC should be the result of public consultations.*** Broad public hearings and input will encourage and promote the understanding of stewardship in Manitoba, and balance the decision-making powers between industry and government and the public. People appear not to understand what the MPSP is, and this would help to correct the situation.

10. ***Consumers must be educated as to their collective role as key stakeholders.*** Their decisions and preferences have a large influence on product and packaging design. Only when consumers challenge industry to be proactive in waste reduction will the MPSP become a true stewardship initiative. The common assumption among the public, that the MPSP is only a recycling initiative, must change. No linkages are made between the "blue box" and the levy paid at the retail level on beverages. Posting messages and literature about

MPSP in retail outlets across Manitoba should be an important part of this education process.

11. ***Efforts must continue at the municipal and provincial levels to improve and coordinate waste management policies and practices.*** The MPSP does not operate in isolation. Other tools and policy instruments can and should be employed in conjunction with the packaging stewardship initiative in order to forward the efforts of waste reduction in Manitoba. These other tools may include: landfill bans on certain packaging and products; recycled content laws; user-pay garbage collection programs; and large-scale municipal composting programs. The Manitoba government and the MPSC should help to provide the necessary resources and information to assist local governments in their management efforts. Waste management practices must become part of an overall integrated approach that includes the MPSP and packaging stewardship obligations towards industry.

References

Alexander, J.H. 1993. *In Defense of Garbage.* Praeger; Westport, Connecticut.

Anderson, T.L. 1993. *N.A.F.T.A. & the Environment.* Pacific Research Institute for Public Policy, San Francisco.

Baarschers, W.H. 1996. *Eco-Facts & Eco-Fiction: Understanding the Environmental Debate.* Routledge; London, England.

Brandson, N. 1998. "Product Stewardship: Theory and Reality". *Breaking the Barriers: Waste Reduction into the New Millennium conference proceedings,* June 2 & 3, Winnipeg.

Burton, T. L. *Natural Resource Policy in Canada: Issues and Perspectives.* McClelland & Stewart, Toronto.

Bury, D. 1999. Environment Canada. *Personal Communication.* March 22.

Bury, D. 1998. "Stewardship and Producer Responsibility". *Breaking the Barriers: Waste Reduction into the New Millennium conference proceedings,* June 2 & 3, Winnipeg.

C.B.C. Radio One. 1998. Morning Edition. November.

C.B.C. T.V. 1998. Running on M.M.T.. The National Magazine. November 2.

C.B.C. T.V. 1998. The Cola Conquest.

C.B.C. T.V. 1995. 24 Hours Evening Newscast, 19, Jan.; 6:00.

Canadian Council of Ministers of the Environment. 1994. *Principles for Packaging Stewardship in Canada.*

Canadian Council of Ministers of the Environment. 1992. *The Technical Basis for the National Packaging Protocol: Summary Report.*

Canadian Environmental Regulation & Compliance News. 1998. October: 1479.

CIPSI. 1993. *CIPSI Summary Document.* Dec., 1993.

CIPSI Ontario. 1992. *Draft CIPSI Proposal for Ontario: Draft Principles: Working Draft - Regulation; Working Draft - Contract.*

Canadian Soft Drink Association. 1993. *Product Stewardship Annual Report 1992.* Toronto, Ontario.

Chang, E., D. Macdonald & J. Wolfson. 1998. Who Killed CIPSI ? *Alternatives Journal.* 24(2): 20-25.

City of Winnipeg. 1996. *An Important Appeal from the City of Winnipeg.* Information Pamphlet.

City of Winnipeg. 1995. *City of Winnipeg Recycling Program Business Plan.*

Claridge, T. 1998. 300-Year-Old Law Recycled in Court Case. *The Globe & Mail.* 19 Dec., A2.

Clark, K.L. & M.S. Winfield. 1996. *The Environmental Management Framework Agreement - A Model for Dysfunctional Federalism?: An Analysis and Commentary.* CIELAP Brief 96/1. Canadian Institute for Environmental Law and Policy, Toronto.

Coffey, G. & F. Hartzmann. 1994. *Moving up the Ladder: The Place of Reuse and Refill in Canadian Waste Management Strategies.* Toronto Environmental Alliance.

Commissioner of the Environment & Sustainable Development. 1998. *Report to the House of Commons: 1998.* Minister of Public Works and Government Services, Ottawa.

Council of Canadians. 1996. *Canada's Growing Environmental Deficit: The Legacy of Cutbacks.*

Crittenden, G. 1998. Flack Attack. *The Globe and Mail.* 31 Oct., D1 & D3.

Crittenden, G. 1998. The Battle of the Blue Box. *The Globe and Mail.* 7 Feb., D2.

Crittenden, G. 1997. The Blue Box Conspiracy. *The Next City.* 3(1): 35-40.

Davis, G.A., C.A. Wilt & J.N. Barkenbus. 1997. Extended Producer Responsibility: A Tool for a Sustainable Economy. *Environment.* 39(7): 10-15+.

DeWiel, B., S. Hayward, L. Jones & M.D. Smith. 1997. *Environmental Indicators for Canada and the United States.* Fraser Forum: Critical Issues Bulletin. Fraser Institute, Vancouver.

Eaton Company Limited. 1974. *Christmas Wish Book.*

Environment Canada. 1997. *A Framework for a Packaging Stewardship Model in Canada: Final Report.*

Environment Canada. 1996. *A Primer on Waste Management: The Environmental Citizenship Series.* Minister of Supply and Services, Ottawa.

Environment Canada. 1996. *The State of Canada's Environment: 1996.* Minister of Supply and Services, Ottawa.

Environment Canada. 1991. *The State of Canada's Environment: 1991.* Minister of Supply and Services, Ottawa.

EPIC. 1992. *Municipal Solid Waste: Issues and Options.*

Federation of Canadian Municipalities. 1990. *Survey Report: Solid Waste Management in Canadian Municipalities.* Wallace Associates, Ottawa.

Fenton, R. 1994 - 1. *Urban Waste Management: A Review of Stewardship Initiatives.* Issues In Urban Sustainability; 4. University of Winnipeg - Institute of Urban Studies, Winnipeg, Manitoba.

Fenton, R. 1994 - 2. Rules Vary In the Global Product Stewardship Game. *The "R" Report.* December. 4: 5-6.

Fenton, R. 1993. Pulling in the Same Direction: Private Waste Stewardship and Municipal Waste Management Planning. *Alternatives.* 19(2): 24-30.

Fenton, R. & J. Sinclair. 1997. *Roles and Structure of Producer Responsibility Organizations.*

Fenton, R. & J. Sinclair. 1996 - 1. Stewardship for Packaging and Packaging Waste: Key Policy Elements for Sustainability. *Canadian Public Administration* 40(1): 123-148.

Fenton, R. & J. Sinclair. 1996 - 2. *MPSP: A First Year of Achievement?* Unpublished paper.

Fenton, R. & J. Sinclair. 1996 - 3. Towards a Framework for Evaluating Packaging Stewardship Programmes. *Journal of Environmental Planning & Management.* 39(4): 507-527.

Ferguson, J. 1999. Manitoba Environment. *Personal communication.* 26, January.

Friesen, K. 1998. "Modifying Your Materials Recycling Facility to Maximize Your Output". *Breaking the Barriers: Waste Reduction into the New Millennium Conference Proceedings.* June 2 & 3, Winnipeg.

Gallon, G. 1997. *The Gallon Letter.* Canadian Institute for Business and the Environment. in D.L. Van Nijnatten, The Day the NGO's Walked Out, Alternatives 24(2): 12, 1998.

Garbage. 1993. Packaging in the 90's. *Garbage.* 6: 24-31.

Garlich, C. 1999. Too Many Dump Sites a Threat. *Winnipeg Free Press.* 18 March, A 13.

Gibson, D. 1999. City of Winnipeg. *Personal Communication.* 18, March.

Hare, M.J. 1998. Source Reduction. *Solid Waste & Recycling.* April/May: 22-26.

Hayes, D. 1978. *Repairs, Reuse, Recycling - First Steps Towards a Sustainable Society.* Worldwatch Paper #23. Worldwatch Institute, Washington, D.C.

Hawken, P. 1993. *The Ecology of Commerce: A Declaration of Sustainability.* Harper Business, New York.

Helson, J., K. Green, D. Nitkin, & A. Stein. 1992. *The Ethical Shoppers Guide to Canadian Supermarket Products.* Broadview Press, Peterborough.

Hoy, S. M. & S.C. Robinson. 1979. *Recovering The Past: A Handbook of Community Recycling Programs, 1890-1945.* Public Works Historical Society, Chicago.

Jackson, J. & B. Wallace. 1993. *Resource Management Systems: An Alternative to Current Waste Management Systems.* Waste caucus of Ontario Environment Network.

Oels, H. J. 1995. *Life Cycle Assessment on Packaging Systems.* Federal Environmental Agency, Berlin.

Kesterton, M. 1998. Social Studies - (World of Beer). *The Globe & Mail.* 10 Nov, A32.

Krueger, A. 1995. Auditor to Probe Exemption. *Winnipeg Free Press.* 20 Jan., B4.

Krueger, A. 1995. New Tax Brews Storm. *Winnipeg Free Press.* 28 Jan., A1.

Kuluk, T. 1999. City of Winnipeg. *Personal Communication.* 19, March.

Love, G. 1995. Recycling Packaging Materials. *Biocycle.* June: 64-66.

Lynes, J. & R. Gibson. 1998. Voluntary Corporate Initiatives For Environmental Improvement. *Alternatives Journal.* Spring 24(2): 18-19.

Manitoba Auditor. 1993. *Report of the Provincial Auditor to the Legislative Assembly.*

Manitoba Environment. 1997. *The State of the Environment Report for Manitoba, 1997.*

Manitoba Environment. 1996. *Waste Reduction and Prevention Strategy Report 1996.* Pollution Prevention Branch; November.

Manitoba Environment. 1995. *The State of the Environment Report for Manitoba, 1995.*

Manitoba Environment. 1991. *The State of the Environment Report for Manitoba, 1991.*

Manitoba Product Stewardship Corporation. 1998. *Annual Report: Putting the Pieces Together: April 1, 1997 to March 31, 1998.*

Manitoba Product Stewardship Corporation. 1999. Recycling Costs & Markets: Is the Sky Falling? *Stewardship Circle.* 1(4):5-6.

Manitoba Product Stewardship Corporation. 1997. *Achieving Balance: The Manitoba Product Stewardship Corporation, Business Plan 1998-2001.*

Manitoba Product Stewardship Corporation. 1996. *Manitoba Product Stewardship Program: Annual Report 1995-1996.*

McAndrew, B. 1998. Industry Told to ante up for Blue Box. *The Toronto Star.* 8 October, A3.

McArthur, K. 1997. Recycling System Strained. *Winnipeg Free Press.* 27, October.

Menzies, D. 1997. Waste Blues: Curbside Recycling Reassessed. *The Financial Post Magazine.* September: 36-50.

Moist, P. 1997. Questionnaire. CBC Radio, Afternoon Show.

Multi-Material Stewardship Board. 1995. *Multi-Material Stewardship Board Business Plan.*

OECD. 1997 - 1. *Extended Producer Responsibility in the OECD Area, Phase II Report: Case Study on the German Packaging Ordinance.* OECD, Paris.

OECD. 1997 - 2. *Extended Producer Responsibility in the OECD Area, Phase II Report: Case Study on the Dutch Packaging Covenant.* OECD, Paris.

OECD. 1997 - 3. *Extended and Shared Producer Responsibility, Phase II Framework Report.* OECD, Paris.

OECD. 1996. *Extended Producer Responsibility in the OECD Area, Phase 1 Report: Legal and Administrative Approaches in Member Countries and Policy Options for EPR Programmes.* OECD Environment Monographs # 114. OECD, Paris.

P.P.E.C. 1998. Canada Achieves Major Success in Diverting Packaging Waste. *P.P.E.C. News.* 8(1). 1-4.

Pollock, C. 1987. *Mining Urban Wastes: The Potential for Recycling.* Worldwatch Paper #76. Worldwatch Institute, Washington, D.C.

Poore, P. 1993. Is Garbage an Environmental Problem? *Garbage.* 6: 40-45.

Recycling Council of British Columbia. 1998. *The State of Product Stewardship in B.C.* June: 1-8.

Recycling Council of British Columbia. 1998. *Reiterate.* March: 4-9.

Recycling Council of British Columbia. 1996. *Reiterate.* May: 3-11.

Recycling Council of Manitoba. 1996. The Evolution of Winnipeg's Residential Recycling Program. *The "R" Report.* Spring issue.

Recycling Council of Manitoba. 1994. *Position on the Manitoba Stewardship Program of the Canadian Industry Packaging Stewardship Initiative.*

Recycling Council of Ontario. 1998. *RCO Update: Provincial Roundup.* 18(2): 1-6.

Roodman, D.M. 1995. Public Money and Human Purpose: The Future of Taxes. *Worldwatch.* Sept./Oct.: 10-19.

Romaniuk, R. 1999. Saskatchewan to Crack Down on Bootleg Recyclables. *Winnipeg Free Press.* 12, May: A5.

Rose, R. 1999. City of Portage la Prairie. *Personal Communication.* 24, March.

Ryan, M. 1993. Packaging a Revolution. *Worldwatch.* Sept./Oct.: 28-34.

Saunders, T. & L. McGovern. 1993. *The Bottom Line of Green is Black.* Harper, San Francisco.

Schmidt, A. 1998. "Community Highlight: Town of Altona". *Breaking the Barriers: Waste Reduction into the New Millennium conference proceedings.* June 2 & 3, Winnipeg

Sinclair, J. & T. Kuluk. 1994. Local Solid Waste Management Decision Making: Planning Beyond 2000. *Optimum: The Journal of Public Sector Management.* Winter: 16-25.

Selke, S.E.M. 1990. *Packaging and the Environment: Alternatives, Trends, and Solutions.* Technomic Publishing, Lancaster.

Spiegel, J. 1999. Manitoba Environment. *Personal Communication.* 3, March.

Statistics Canada. 1996. Statistics Canada Automated Telephone Service - 1995 Population Figures for Canadian Urban Centres. Personal Communication.

Statistics Canada. 1994. *Human Activity and the Environment.* Ministry of Industry, Science and Technology, Ottawa.

Statistics Canada. 1991. *Human Activity and the Environment.* Ministry of Industry, Science, and Technology, Ottawa.

Stephenson, D. 1998. European-Style Extended Producer Responsibility: A Report on Costs. *Solid Waste & Recycling.* Feb/Mar: 14-18.

Stilwell, E.J., R.C. Canty, P.W. Kopf, & A.M. Montrone. 1991. *Packaging for the Environment: A Partnership for Progress.* AMACOM, New York.

Strong, D.L. 1997. *Recycling in America: Second Edition.* ABC-CLIO Inc., Santa Barbara, Calif.

Urquhart, I. 1998. Blue Box Plan Lacks Bravery. *The Toronto Star.* 8 Oct, A25.

Valiante, U. 1998. Upstream to Diversion. *Solid Waste & Recycling.* Aug/Sept.: 15-21.

Van Nijnatten, D. L. 1998. The Day the NGO's Walked Out. *Alternatives Journal* 24(2): 10-19.

Webb, K. 1990. *Between Rocks and Hard Places: Bureaucrats, Law and Pollution Control. in* R. Paehlke & D. Torgerson, Managing Leviathan: Environmental Politics and the Administrative State. Broadview Press, Peterborough.

Whitaker, J.S. 1994. *Salvaging the Land of Plenty: Garbage and the American Dream.* William Morrow & Company, New York.

Winnipeg Free Press. 1998. 31, October. (untitled).

Winnipeg Free Press. 1997. Alberta Starting Drink Box Deposits. 29, May: B8.

Winnipeg Sun. 1996. Council Juggles Blue Box Issue. 6, October. (untitled).

Young, J.E. 1995. The Sudden new Strength of Recycling. *Worldwatch.* 8(4):20-25.

Young, J.E. 1991. *Discarding the Throwaway Society.* Worldwatch Paper #101. Worldwatch Institute, Washington, D.C.

Young, J.E. & A. Sachs. 1994. *The Next Efficiency Revolution: Creating a Sustainable Materials Economy.* Worldwatch Paper #121. Worldwatch Institute, Washington, D.C.

Appendix I

participant: date:
telephone:

QUESTIONS

1) What, in your opinion, is stewardship?

2) Part I) Is the MPSP a satisfactory example of stewardship?

Part II) Does it compare favourably with other stewardship models?

3) Is the MPSC board an effective body adequately representing stakeholders, and the interests of Manitobans?

4) Could you state what you perceive to be the primary achievement of MPSP?

5) Could you state what you perceive to be the primary shortcoming of MPSP?

6) Is the current funding mechanism (the 2 cent levy) effective?

7) Is the scope of material collected and managed by MPSP adequate?

8) Do you feel Manitobans are sufficiently educated about MPSP?

9) Do you think given the physical limitations in Manitoba (population and geography for example), that MPSP is providing an adequate level of performance to Manitobans?

10) Do you think MPSP has effectively helped to reduce the amount of waste in Manitoba, and will the 50% reduction goal be achieved by next year?

notes (other comments):

Appendix II
LIST OF SURVEY PARTICIPANTS

Mr. Jim Fogg
General Manager
M.P.S.C.

Mr. Ray Rose
Waste Coordinator
City of Portage la Prairie

Mr. David McConkey
President, MARR

Mr. Duncan Bury
Senior Advisor
National Office, Pollution Prevention
Environment Canada

Mr. Ken Thomas
Reeve, RM of St. Clements

Ms. Carolyn Garlich
Council of Women of Winnipeg

Mr. David Ford
Chair, Board of Directors
Westman Recycling Council

Mr. Tony Kuluk
Solid Waste Planning Engineer
City of Winnipeg

Mr. Rick Penner
Earthbound Environmental

Ms. Jan Westlund
President, Resource Conservation Manitoba

Ms. Gloria Desorcy
Consumers Association of Canada

Mr. Dwight Gibson
Manager, Solid Waste
City of Winnipeg

Mr. James Zonneveld
Red Box Recycling

Appendix III

Survey Results

•13 respondents of 25 contacted

1) What, in your opinion, is stewardship?

- *Responsibility on someone's part (industry, govt, consumers, PRO's) 92%.*

  also: partnerships, taking care of environment, good management, clean up

2) Part I) **Is the MPSP a satisfactory example of stewardship?**

- *No - 54%* *Maybe or unsure - 31%* *Yes - 15%*

Part II) Does it compare favourably with other stewardship models?

- *Maybe or unsure - 54%* *yes - 23%* *no - 23%*

3) Is the MPSC board an effective body adequately representing stakeholders, and the interests of Manitobans?

- *Maybe or unsure - 46%* *yes - 38%* *no - 15%*

4) Could you state what you perceive to be the primary achievement of MPSP?

- *Providing funding for province-wide recycling programs - 92%*

  also: education programs, waste reduction, advertising and awareness

5) Could you state what you perceive to be the primary shortcoming of MPSP?

- *No levy redistribution - 69%*

  also: market uncertainty, only voluntary, no waste reduction or package changes, not enough stewards, too much money in MPSC account

6) Is the current funding mechanism (the 2 cent levy) effective?

- *No - 54%* *Yes - 31%* *Maybe or unsure - 15%*

7) Is the scope of material collected and managed by MPSP adequate?

- *Yes - 46%* *No - 38%* *Maybe or unsure - 15%*

8) Do you feel Manitobans are sufficiently educated about MPSP?

- *No - 46%* *Maybe or unsure - 46%* *Yes - 8%*

9) Do you think given the physical limitations in Manitoba (population and geography for example), that MPSP is providing an adequate level of performance to Manitobans?

- *Yes - 54%* *No - 23%* *Maybe or unsure - 23%*

10) A) Do you think MPSP has effectively helped to reduce the amount of waste in Manitoba, and;

- *Yes - 62%* *No - 23%* *Maybe or unsure - 15%*

B) Will the 50% reduction goal be achieved by next year?

- *No - 85%* *Maybe or unsure - 15%* *Yes - 0%*

Appendix IV

GUIDING PRINCIPLES FOR PACKAGING STEWARDSHIP

Developed by the National Packaging Task Force and approved by the Canadian Council of Ministers of the Environment

Packaging stewardship is a concept by which industry, governments, and consumers assume a greater responsibility for ensuring that the manufacture, use, reuse, recycling, and disposal of packaging has a minimal impact on the environment. This include prime responsibility by industry to design packaging according to the 3Rs principles, take steps to divert packaging from disposal, actively use recovered materials, and ensure packaging is properly handled if it must be disposed of. Governments have a responsibility to promote packaging stewardship and to encourage the widespread recognition and adoption of the principles as outlined. Consumers have a responsibility to make appropriate packaging choices when purchasing products and, where facilities exist, to divert packaging from disposal.

1. **Packaging stewardship initiatives should ensure that packaging has a minimal effect on the environment**

2. **Packaging stewardship initiatives should recognize and promote the hierarchy of source reduction, reuse, and recycling, in support of general resource conservation, unless in specific cases environmental interests are proven to be better served by a change in the hierarchy**

3. **In keeping with a mutual goal to reduce packaging waste, consumers, industry and governments share responsibility for the environmental impacts of packaging waste and for making packaging stewardship programs viable in Canada**

4. **All stakeholders should be involved and responsible in developing and implementing stewardship programs**

5. **Packaging stewardship initiatives should be comprehensive and apply to all packaging used in Canada**

6. **Packaging stewardship should be based on the establishment and maintenance of programs that are inclusive and fair:**

a) between packaging and other reusable or recyclable components of the municipal solid waste stream that are managed by a stewardship program

b) between imported and domestic packaging; and

c) between packaging material types

7. Packaging stewardship programs should strive for national consistency, balanced with flexibility to respond to regional differences

8. True cost pricing is essential so that stewardship internalizes the costs of managing packaging waste, and sends the correct signals to the consumers and producers of packaged goods

9. Packaging stewardship recovery systems should consider markets, as well as other economic and environmental factors

10. Packaging stewardship should promote market development and the use of recovered materials

11. Packaging stewardship includes a responsibility for monitoring, evaluation, and education

12. A packaging stewardship initiative should meet its environmental objectives in the most efficient, cost-effective manner

13. Stewardship of packaging extends beyond national borders

14. Every stewardship program should clearly define the scope of the program including which products are covered by the initiative, the conditions under which those products will be covered, and the extent of stewardship.