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**A CASE STUDY OF FORT WHYTE CENTRE'S REHABILITATION OF
THE TRANSCONA DOMTAR WOOD PRESERVATIVE TREATMENT SITE:
LESSONS FOR NON-GOVERNMENT ORGANIZATION
INVOLVEMENT IN BROWNFIELD REHABILITATION**

by
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*A Practicum Submitted in Partial Fulfilment
of the Requirements for the Degree,
Master of Natural Resources Management*

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**A Case Study of Fort Whyte Centre's Rehabilitation of the Transcona Domtar Wood
Preservative Treatment Site: Lessons for Non-Government Organization Involvement in
Brownfield Rehabilitation**

BY

Paul Holden

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of
Master Natural Resources Management**

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ABSTRACT

Every day, Canadians discover that past practices, poor environmental controls, and gross mismanagement of hazardous substances have resulted in thousands of contaminated sites. The focus of this research paper has been placed on a subset of contaminated sites called brownfields. These sites exhibit good potential for other uses and are located in urban areas.

The major challenge remains determining and agreeing upon an acceptable end-use for brownfields. Developers and the financial services sector are interested in economically viable redevelopment opportunities. However, not all brownfields are ideally suited for redevelopment in the economic sense of the word. There is a real need for an alternative form of redevelopment that encourages stakeholders to partner in determining a use beneficial to the health of the surrounding landscape and the needs of the community impacted. That form can best be described as rehabilitation.

Recently, non-government organizations (NGO) have begun to evaluate whether or not they can partner in the rehabilitation of brownfields. The Winnipeg based Fort Whyte Centre felt that they had a role to play and partnered with Domtar Inc. in the rehabilitation of an old wood preservative treatment facility site in the community of Transcona, Winnipeg. Fort Whyte proposed and the community, government and Domtar accepted, turning the remediated site into a natural Bioreserve.

While the partnership has provided a number of lessons for NGO involvement and can be replicated, it was unique in a number of ways. The Bioreserve provided the acceptable economic, environmental, and social/health solution to stakeholders. Government's decision to (a) ensure that the future end-use of the site remained compatible with the on-site management of the contaminated soil, as well as (b) their insistence that the existing parkland/recreational land use

zoning remain in place, was a significant catalyst behind the success of this approach.

The study recommends that a more predictable legislative regime needs to be in place to allow rehabilitation to occur; community support of the end-use should be a requirement; a system of incentives favouring redevelopment/rehabilitation should be put in place; and, zoning restrictions should be determined before proceeding with remediation to determine the level of clean-up required.

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CHAPTER 1.0

INTRODUCTION

1.1 Background

Across Canada, thousands of contaminated sites lie abandoned as a result of decades of industrialization with little to no thought given to the environmental, economic, and social/health consequences for future generations. Every day, Canadians discover that past practices, poor environmental controls, and gross mismanagement of hazardous substances have resulted in thousands if not tens of thousands of contaminated sites.

For governments, industry, financial institutions, insurance companies, and the public, contaminated sites remain a significant problem. These problems go well beyond the obvious environmental concerns and impacts. They also include economic and social/health costs that we have been forced to bear. Estimates of clean-up costs have ranged anywhere from hundreds of millions to billions of dollars.

Contaminated sites represent missed opportunities. For a variety of reasons, including concern over potential clean-up costs and future liability, landowners have abandoned properties while potential purchasers continue to avoid properties suspected of being contaminated (Greening Canada's Brownfield Sites, 1998).

The focus of this research paper has been placed on a subset of contaminated sites called brownfields. Brownfields are abandoned or under-utilized properties where past actions caused real or suspected environmental contamination. As a subset of contaminated sites, they exhibit good potential for other uses and usually provide economically viable opportunities. The majority of

these sites are located in urban areas where municipal services and transportation corridors are close by.

The redevelopment of brownfield sites remains a significant issue in a number of Canadian urban centres. As can be expected, there are many barriers to redevelopment. In the last 25 years as governments began to wrestle with what to do with these sites, a steady stream of environmental legislation and public policy worked its way through federal, provincial and municipal governments across the country. "The legacy of the sixties, a grass roots ground swell clamoring for the cleanup of the environment, was born into legislative enactments on a monumental scale" (American Bar Association, 1990). The effectiveness and impacts of the legislation are just now being measured.

In many cases, the legislation has acted as a deterrent against further pollution, however it has also acted as a deterrent to cleaning up and redeveloping existing brownfields. The financial costs to industry, insurers, bankers, and by default the public have been and continue to be unprecedented. Many industries have simply walked away leaving these sites abandoned.

Existing literature indicates that some lawmakers anticipated that insurance would play the key role. The resulting legal issues for the insurers and the insured could hardly have been foreseen. In the late 1980's crisis struck the environmental liability insurers. Environmental legislation was costing the insurance industry millions of unforeseen dollars per year in claims. Many insurance companies were put out of business leaving someone else to pay for the environmental liability. Those that did survive withdrew their coverage of environmental liability altogether (Abraham, 1988).

1.2 Issue\ Problem

With changes in public expectation, taking action on brownfields has become increasingly important to government and the public. The major challenge remains determining and agreeing upon an appropriate/acceptable end-use for a remediated brownfield. The end-use will differ as a result of many factors including regulatory, economic, environmental and social/health concerns.

Developers and the financial services sector are primarily interested in the economically viable opportunities of brownfield redevelopment. They remain focused on the positive economic opportunities that redeveloping a site for industrial, commercial or residential use can bring. They want to see a sufficiently predictable legislative, legal and public policy regime before remediation and redevelopment occurs. The Canadian Council of Ministers of the Environment (CCME), with the cooperation of the provincial governments in Canada, took on the task of addressing site remediation and assigning liability. A review of CCME's actions with a look at Manitoba's Contaminated Sites Remediation Act will be contained in the literature review.

Not all brownfields are ideally suited for "redevelopment" in the economic sense of the word. In many cases the costs associated with full remediation and redevelopment outweigh the ability of a developer to pay. There is a real need for an alternative form of redevelopment that encourages various stakeholders to partner and work together in determining a use beneficial to the health of the surrounding landscape and the needs of the community affected. That form is best described as "rehabilitation". While the economic benefits may not be as evident, rehabilitation does provide significant value to stakeholders as will be discussed in the case study in Chapter 4. Through the cooperative efforts of industry, government, lenders, the community and non-government organizations (NGO), long-term sustainability of degraded environments can be attained.

These partnerships can serve as a catalyst for new sustainable redevelopment/rehabilitation activities on brownfields.

1.3 Sustainable Development

Sustainable development is widely described as a complex system of interdependent components. These components - the environment, economy, and societal health and well-being - all play a pivotal role in determining our quality of life (Figure 1). "It involves fundamental changes in the way business is done, what is taught to our children, how we as individuals live and conduct our lives, and how government and public institutions address the essential problems affecting our lives" (Our Common Future, 1987).

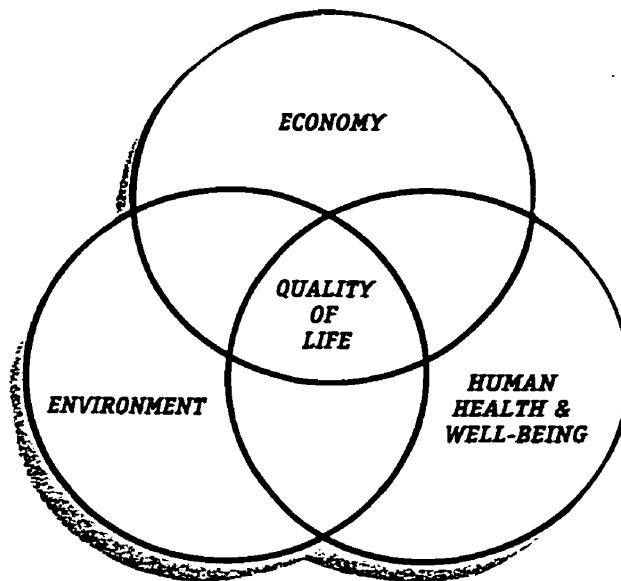


Figure 1: Sustainable Development Model (Manitoba Round Table, 1998).

As a result, the environment (the life sustaining processes of the earth and its natural resources), economy (the provision of jobs, income and wealth resulting from economic activity), and societal health and well-being (the overall physical, psychological, spiritual, and social health and well-being of individuals, families

and communities) are interdependent. A change in one has a significant impact on the others (Manitoba Round Table on Environment and Economy, 1997).

The sustainable development model provides a possible framework to encourage various stakeholders in brownfield redevelopment to partner and work together in determining an end-use beneficial to the health of the surrounding landscape and the needs of the community affected. The model will be applied and discussed in the case study in Chapter 4.

1.4 Definitions

For the purposes of this research, rehabilitation is recognized as a form of redevelopment. Central to the discussion, there must be an understanding of the following definitions and organizations:

- (a) Brownfield Redevelopment - is an approach to sustainably re-using a contaminated site for other uses that usually provide economically viable opportunities (Environmental Protection Agency, 2001).
- (b) Brownfield Rehabilitation – is a form of reclamation that targets social, environmental, or economic benefits by reusing the site for public enjoyment (Toni Morris-Oswald, 2000).
- (c) Bioreserve – refers to areas, generally large ones, where conservation of biodiversity can be carried out at the landscape scale. Bioreserves are large enough to encompass examples of multiple types of plant and animal life that often naturally occur and interact within a region.
- (d) Biodiversity – is the variety of life in all its forms, levels and combinations. Includes ecosystem diversity, species diversity, and genetic diversity (National Wildlife Federation, 2001).
- (e) Fort Whyte – is a non-profit Foundation established to provide facilities and financing for education in the science and art of conservation of wildlife and its habitat (Fort Whyte Centre, 1999).

- (f) Domtar Inc. – is Canada's largest producer of specialty and fine papers in Canada and is a leading producer of containerboard and corrugated containers. Throughout the 20th century they were also known as one of North America's leading producers of preserved wood, newsprint and groundwood specialties, as well as construction materials (Domtar, 2001).

1.5 Objectives

The primary purpose of this research was to undertake a case study of Fort Whyte Centre's rehabilitation of the Domtar Inc. wood preservative treatment site and highlight lessons for non-government involvement in brownfield rehabilitation. In order to support the purpose of this study, a number of specific objectives were developed. These included:

1. to assess the role and attitudes of stakeholders in brownfield redevelopment/rehabilitation;
2. to discuss the current legislative and policy regime in Manitoba to support brownfield redevelopment/rehabilitation;
3. to develop and assess the effectiveness/practicality of the Fort Whyte Centre's partnership approach in the rehabilitation of the Domtar wood preservative treatment site and determine its potential use for future application by other non-government organizations; and,
4. to make recommendations for others based on the lessons learned from the Fort Whyte/Domtar case study.

1.6 Methods

The basis of all sections of this report was an extensive review of the related literature and the case study of the Fort Whyte Centre's/Domtar Inc.'s rehabilitation of Domtar's old wood preservative treatment site in Winnipeg,

Manitoba. The following is a summary of the research methods utilized to meet the proposals' objectives. The methods included:

- (a) identifying and discussing the role and attitudes of stakeholders in brownfield redevelopment including government, industry, the public, non-government organizations, and the financial services industry. The literature review was the main focus;
- (b) researching and reviewing the existing regulatory/legislative and policy regime on brownfield redevelopment/rehabilitation. Focus was placed on current barriers as well as supports available. A review of the Canadian Council of Ministers of the Environment's March 1993 recommendations and principles on contaminated site liability was also undertaken. Those provinces that have adopted these principles have brought greater certainty to stakeholders around liability and thus redevelopment and rehabilitation. Manitoba adopted these principles and they are reflected in Manitoba's Contaminated Sites Remediation Act.
- (c) outlining lessons for non-government organization involvement in brownfield rehabilitation based on the recent "Brownfields to Bioreserve" partnership signed between Fort Whyte and Domtar with the support of the Manitoba Government and the community of Transcona in Winnipeg. This partnership has resulted in a 50-year lease being signed between the Fort Whyte Centre of Winnipeg and Domtar Inc. to rehabilitate and manage the remediated old wood preservative operations site in Transcona into a natural Bioreserve (Domtar Site Map, Figure 2).

Discussions with Domtar, Manitoba Conservation (formerly Manitoba Environment), members of the community, and Fort Whyte Centre have been

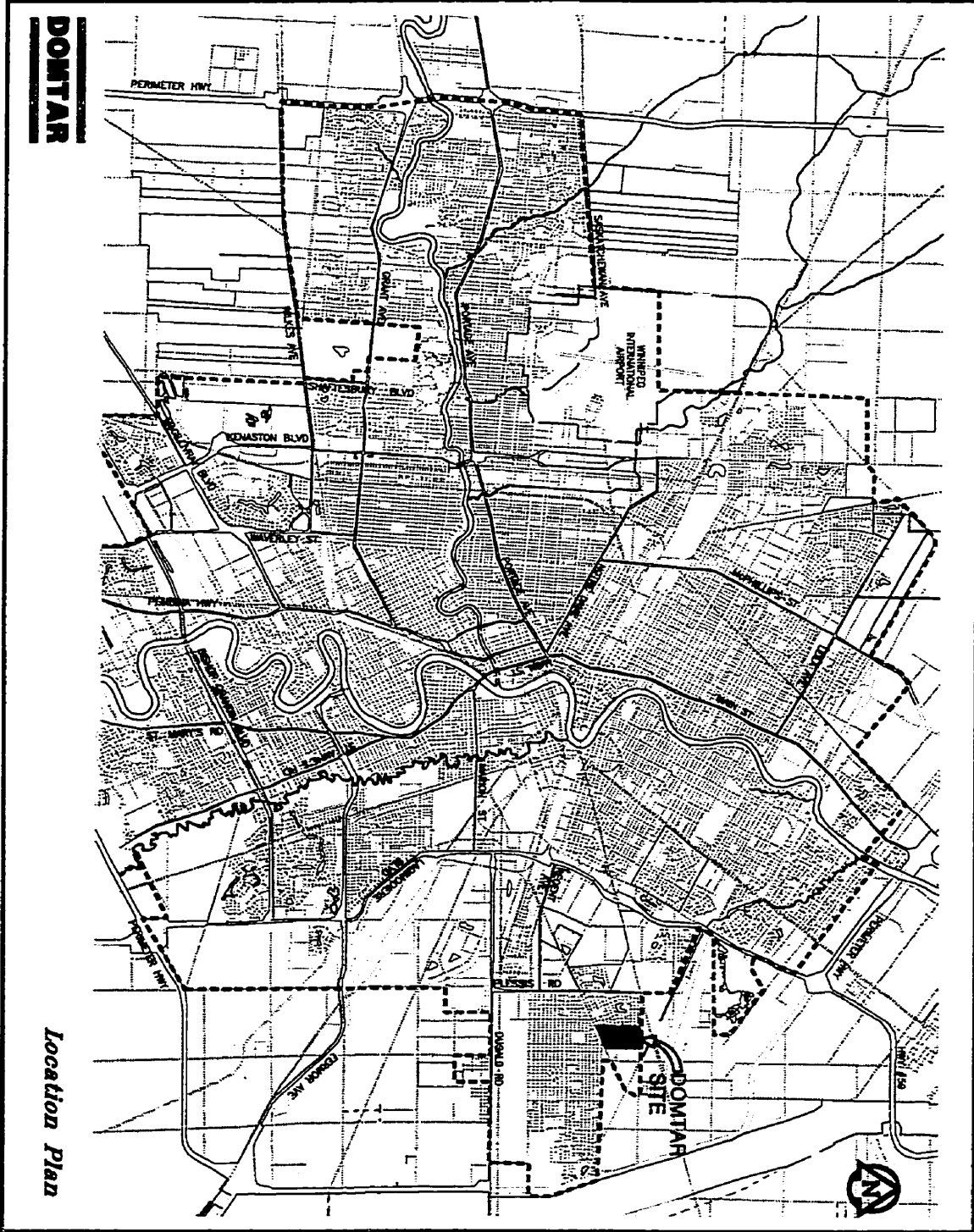


Figure 2: Fort Whyte Centre's Bioreserve located on the old Domtar wood preservative treatment facility site in Transcona, Winnipeg (Domtar, 1997).

documented in the case study. The case study considered and answered:

- Why Fort Whyte, a well respected non-government/not for profit organization, agreed to propose a rehabilitation solution and ultimately partner with Domtar;
- How the community was involved (i.e. through the Transcona Community Bioreserve Residents Liaison Committee and a community survey);
- How government (i.e. the provincial Department of Environment) was involved in the remediation and rehabilitation of the site; and,
- How Domtar and the Fort Whyte Centre reached consensus with all parties and were able to move the partnership and rehabilitation forward.

1.7 Benefits

The private sector, public sector, communities and (Non-Government Organizations) NGO's stand to benefit from this research. All parties are increasingly concerned about the negative economic, environmental and social impacts of brownfields. In most cases, the private sector wants to be seen as a responsible/clean environmental citizen while governments want to ensure that taxpayers are not burdened with the costs associated with the poor environmental practices of the past and the future.

The research also provides stakeholders with a real life example of a successful working partnership between a company (Domtar) and an NGO (the Fort Whyte Centre) in the rehabilitation and long-term management of a former brownfield. While the case study may be unique in application, the research can be used as a catalyst to encourage partnerships between other parties in the future.

1.8 Organization of the Study

The study has been organized in the following manner. Chapter 1 provides background information relevant to the study including the relevant decision-makers in the area, the need for the study, and the objectives of the study. Chapter 2 reviews the literature relevant to the study. Topics include causes and characteristics of brownfields; identification of stakeholders including the financial services sector, industry, government, and the public; current regulatory and policy framework; advantages and barriers to redevelopment; and, strategies to encourage investment. Methodologies to achieve the objectives of the study are discussed in Chapter 3. The Domtar/Fort Whyte case study is presented and analysed in Chapter 4 while a summary, conclusions, and recommendations regarding non-government organization involvement in brownfield rehabilitation is found in Chapter 5.

CHAPTER 2.0 LITERATURE REVIEW

CREATING COMPREHENSIVE SOLUTIONS FOR STAKEHOLDERS IN BROWNFIELD REDEVELOPMENT/REHABILITATION

2.1 Introduction

Brownfields are usually located in areas where redevelopment/rehabilitation opportunities are significant. In many cases existing municipal services are readily available. As far as planning and land use reasons are concerned, brownfields represent a desirable location for revitalization of the urban core at the same or higher land uses than presently existed on the site (Financial Services Sector and Brown Field Redevelopment, September 1996).

The literature review was conducted to examine the characteristics of brownfields, determine the stakeholders and their interests, review the current policy and regulatory framework including the barriers and incentives to redevelopment/rehabilitation, and to identify strategies to encourage investment.

2.2 Definitions

Brownfield sites are a subset of the total number of contaminated sites in Canada. For the purposes of this research, the definition of a contaminated site has been taken from the Canadian Council of Ministers of the Environment, who in the early 1990's defined these sites as any area where a chemical substance or hazardous material was located as a result of spilling, leaking, pouring, abandoning, emptying, disposing, leaching or improper use of any kind (CCME, 1992a). Where these areas exist, it is difficult to put a precise figure on the cost to clean-up.

Estimates reported in the media range from \$5 billion to \$20 billion (Report of the Auditor General, May 1995). Estimates for the number of brownfields in Canada vary widely, however it is likely in the order of 3000.

2.3 Causes of Brownfields

There have been a number of industries singled out as producing a large portion of the brownfield sites across Canada. For example, the manufacture of town gas by industry through the destructive distillation of coal, contaminated the cores of many urban centres. The residues from these plants were used to manufacture things like building products, often in the same industrial area of a city.

The petroleum refining and related petro-chemical industry has also been identified with significant brownfield association. Perhaps the most famous or infamous brownfields have been the petroleum product distribution outlets, or as they are commonly known, gas stations. Oil companies across the country have had difficulty selling sites of former service stations because of the possibility of and actual damage caused by leaking underground gasoline tanks (The Financial Services Sector and Brownfield Redevelopment, September 1996). These industries and many others continue to push for solutions in cooperation with government and other stakeholders. The case study in Chapter 4 provides an example of the results of cooperation between stakeholders.

2.4 Characteristics of Brownfield Sites

Within urban areas in Canada, large brownfield sites have often had similar characteristics. These sites have usually been:

- vacant or had buildings with little or no (and sometimes negative) value;
- part of a former traditional industrial area;
- surrounded by urban development;

- located near railways or harbours;
- near lakes and waterways;
- near downtown; and
- serviced with infrastructure.

In the eye of a developer, many of the characteristics listed above remain the hallmarks of a prime development site usually for housing. However, after considering the contamination issue, most would pass over these sites in favour of a greenfield setting where there is less financial risk and more certainty for development.

In the eye of the consumer, these sites remain desirable addresses, provided of course there is no health risk, perceived or otherwise. It is expected that there will be a future demand for high density housing in downtown environments which brownfield sites can serve. Inner city locations bring the inherent benefits of living closer to both work and other urban amenities (Removing Barriers to the Redevelopment of Contaminated Sites for Housing, August 1996).

2.5 The Canadian Council of Ministers of the Environment

In the mid 1990's, the Canadian Council of Ministers of the Environment (CCME) undertook the enormous task of coordinating a consistent approach across Canada to deal with contaminated/brownfield site liability. This effort came about for a number of reasons. First, environment ministries across the country had encountered the issue with increasing frequency. Second, certain business organizations urged the CCME to lead a national exercise of resolution to reduce the unpredictability of liability. All interested persons agreed that there was a need for early action (CCME, Contaminated Site Liability Report).

So many organizations and individuals were keenly concerned about liability issues that it was recognized that everyone could not be involved in all aspects of the work. A core group consisting of five CCME jurisdictions - Nova Scotia, Ontario, Canada, Manitoba and Alberta - and five stakeholder organizations - Canadian Bankers Association, Canadian Environmental Law Association, Canadian Chemical Producers Association, West Coast Environmental Law Association and the Canadian Petroleum Products Institute - was formed under the guidance of Manitoba and Alberta as co-chairs (CCME, Contaminated Site Liability Report). A broader advisory group was then established to engage in the discussion of the specific issues to ensure that a variety of perspectives were on the table and that the broadest possible support for the outcomes was in place.

The CCME Task Group believed that the "problem of contaminated/brownfield sites and what to do with them was really a two-sided problem: on the one side was the problem of existing contaminated/brownfield sites, while the other side of the issue involved what to do with these sites once remediated" (CCME, Contaminated Site Liability Report). Both sides of the issue were significant, however the approaches to resolving these related aspects of the issue were and will be very different. The Task Group's mandate was to focus on contaminated/brownfield sites rather than redevelopment or rehabilitation.

In 1994/5 the task group tabled 13 principles (Appendix I) and recommended that they be used as a model upon which individual provincial governments could develop legislation and regulations that would be consistent across Canada. In summary these principles included:

1. "polluter pays";
2. "fairness";

3. "openness, accessibility, and participation";
4. "beneficiary pays" based on the view that there should be no "unfair enrichment";
5. "sustainable development", integrating environmental, human health and economic concerns;
6. there should be broad net cast for the determination of potential responsible persons. However, the following persons should have a conditional "exemption" based upon clearly defined statutory exemptions:(a) Lenders - beyond the outstanding balance of the debt, unless the lender had actual involvement in the control or management of the business of the borrower; and (b) Receivers; Receiver-Managers, Trustees (including trustees acting in a fiduciary capacity); these persons should be liable only if they fail to take reasonable steps to prevent further contamination, or otherwise fail to satisfactorily address ongoing environmental concerns at the site;
7. remediation legislation should provide the necessary authority and means to enable the recovery of the public funds expended on the remediation of contaminated sites from those persons deemed to be responsible;
8. member governments should pay particular attention to the design of a process which will facilitate the efficient cleanup of sites and the fair allocation of liability;
9. a list of factors be established for use in the liability-allocation process to allocate the liability of responsible persons;
10. alternative dispute resolution (ADR) procedures should be made available to resolve issues of liability; for contaminated sites. For example, voluntary allocation, mediated allocation, directed allocation, and joint and several liability;
11. discretion should be retained by member governments to designate sites as contaminated sites;

12. a "responsible person", who completes the cleanup of a contaminated site to the satisfaction of the regulatory authority, should be issued an official "certificate of compliance" by that authority; and,
13. benchmarks should be developed for the remediation of contaminated sites (CCME, Contaminated Site Liability Report).

These principles have been the basis upon which provincial governments across Canada including Manitoba have formulated their legislation. While they don't address the issue of redevelopment or rehabilitation directly, determining who is liable for the existing contamination provides developers and investors some level of comfort when considering whether to proceed with a project. However, this may not be enough to satisfy all of the stakeholders.

2.6 Stakeholders

In order to remediate brownfields, stakeholders have worked together to create comprehensive solutions. To do this, the various stakeholders needed to understand what motivates each group. As part of a comprehensive, concerted approach, stakeholders have looked for options for private and public sector alliances to promote investment in brownfield redevelopment/rehabilitation. This involves identifying the sites, the condition of the land, some of the benefits of each location, available governmental incentives, insurance options and some sources of private investment (Greening Canada's Brownfield Sites, 1998). Chapter 4 provides an example of such an alliance in the rehabilitation of a brownfield.

The major stakeholders/partners in brownfield redevelopment/rehabilitation have traditionally included:

- the financial services sector (banks, trust/loan companies, insurance companies, and securities dealers);

- local and provincial governments;
- developers; and
- the public.

A recent addition to this list is the non-government organization. A non-government organization is an association that is based on the common interests of its members, individuals, or institutions; has no governmental status or function; and is not created by a government, nor is its agenda set or implemented by government (SIL International, 1999). The case study in Chapter 4.0 will further outline their role in brownfield rehabilitation and lessons for possible future involvement.

2.6.1 Financial Services Sector

2.6.1.1 Insurance Industry

In the late 1980's, crisis struck the environmental liability insurers. As more and more environmental legislation was passed, the unanticipated cost to the insurance industry was in the millions. As a direct result, many insurance companies were forced out of business leaving someone else to pay for environmental liability. Those that did survive withdrew their coverage of environmental liability altogether (Abraham, 1988).

As a major stakeholder, the insurance industry tried to respond to the need for environmental insurance. Throughout, the 1990's, underwriters followed a basic set of underwriting guidelines when looking at risks. These guidelines include:

- losses must be accidental and not existing or deliberately caused.
- losses need to be measurable so underwriters have some idea of their liability.

- past loss experience is needed so future losses and costs can be projected.
- no losses, individual or in the aggregate, can occur which would imperil the financial stability of the insurance company (McKernan, 1993).

Clearly many environmental risks fall outside of these guidelines, leaving many companies uninsured.

2.6.1.2 The Banking Industry

"There are two broad issues facing the banking industry: credit risk and environmental liability" (Sinclair, Sustainable Capital, 1993). With the collapse of the insurance industry in the mid 1980's, and the subsequent development of strict insurance guidelines to assess risk, individuals effected by the contaminated sites have had to look for someone else to pay for the damages. Although the CCME principles adopted by many provinces provide the banks with an exemption beyond their security, the industry remains concerned that:

- lenders in Canada can still be held liable as owners or operators of contaminated facilities in which they hold a security interest and participate in the management of the insurer's facility;
- the potential reduction of cash flow caused by government ordered cleanups limit a borrower's ability to repay loans; and
- there remains the possibility of cleanup costs ranking ahead of a creditor's security if and when the assets of a bankrupt company are divided (McKernan, 1993).

As a result, financial institutions have become extremely rigid in financing business to the point where it is hampering those businesses which currently have good, clean environmental records. As for those that wish to redevelop or

rehabilitate brownfield sites, financial institutions are still determining whether they are prepared to provide financial support given the risks.

The significance of broad, uncertain and severe liability, from a credit perspective, was that environmentally risky borrowers have found it difficult to make credit arrangements from the bank or any other lender. Additional investigations are required to alleviate lenders' environmental concerns and an increased risk premium must be built into the cost of borrowing to cover possible loan losses arising from environmental liability. All borrowers have paid increased costs to obtain funds (Canadian Bankers Association, Sustainable Capital).

The Canadian Bankers Association has voiced a number of specific concerns. They believed that there could be no doubt that environmental protection was a vital area of public concern, but they were concerned that environmental protection law in Canada punishes the innocent as well as the guilty. Lenders and investors who were not polluters were being asked to pay the penalty for environmental damages caused by others (Canadian Bankers Association, November 1991).

In January of 1993, Sentar Consultants Ltd. released a report that stated that "environmental liability should not extend to lenders directly". It is imperative that lenders be able to hold a security interest in the property of a borrower without fear of attracting environmental liability. This did not relieve the lender from credit risk associated with environmental liability, but limited the capital at risk to the value of the security held in collateral and enabled the banking community to evaluate the worst case scenario when lending (Sentar, Western Provinces Environmental Industries Business Development Study).

2.6.1.3 Industry

In Western Canada, as elsewhere, industry is still awaiting test cases in order to clarify the magnitude of liability potential. Disasters such as the Mississauga derailment or the Hagersville tire fire increased the fear of environmental liability by these waste producers. Interestingly enough, the heightened level of awareness has not manifested itself in terms of the increased use of consultants.

Many of the major waste producers such as the pulp and paper and oil and gas industries were conducting environmental assessments using in-house staff (Sentar, Western Provinces: Environmental Industries Business Development Study). Proponents of this approach have argued that, as owners and operators of waste generating facilities, they were in the best position to undertake cleanup and assessment. This approach created a new assortment of risks, however. For example:

- self inspection may not be objective;
- the inspector may be lacking necessary expertise; and
- in the event of an information leak, there would be no opportunity for client-counselor privilege (Sentar, Western Provinces: Environmental Industries Business Development Study).

As more test cases have arisen, polluters have become more aware of these risks and increasingly use specialists.

2.6.2 Government

Municipalities have the potential to play a major role in promoting the remediation and redevelopment/rehabilitation of brownfield sites. It has been suggested that municipalities should be given more responsibility over sites with minor contamination leaving more serious contaminated sites to be directly

administered by provincial governments. In return, municipalities have considered integrating land-use planning and approval processes as their contribution to a comprehensive, concerted approach for redeveloping/rehabilitating brownfields (Removing Barriers to the Redevelopment of Contaminated Sites for Housing, August 1996). In order to ensure consistency these policies could include provincial standards. To date however, provincial governments have been reluctant to transfer this authority.

Across Canada, provincial governments have endorsed the CCME's principles developed to provide a consistent approach to environmental liability. Alberta's Environmental Protection and Enhancement Act has allowed the province to use a retroactive clause to seek out those practices responsible for historical contamination at specific brownfield sites. This clarification of liability is anticipated to encourage the development of brownfields. Its success is yet to be determined. Saskatchewan has moved towards a risk-based approach for the remediation of brownfield sites. This change could potentially make brownfield redevelopment financially feasible, as remediation costs could be drastically reduced. Unfortunately, most provincial legislation remains silent on the issues surrounding the redevelopment/rehabilitation of brownfield sites.

There have been very few initiatives at the provincial level to create a limited degree of protection for lenders and investors, to encourage their participation in brownfield redevelopment/rehabilitation. The approach has generally been to provide them with the opportunity to attempt to recover value from loan/investment security as long as the lender does not take control of the property or of the business conducted thereon and was not responsible for any contamination following the time of the lender's first involvement. Provinces have continued to find themselves under pressure to take action.

2.6.2.1 Manitoba's Contaminated Sites Remediation Act

In 1996, Manitoba proclaimed the Contaminated Sites Remediation Act. As with other provinces, the legislation was based on the CCME's principles. The purpose of the legislation was to provide for the remediation of contaminated sites, in order to reduce or mitigate the risks of further damage to human health or the environment and where practicable, to restore such sites to useful purposes (Contaminated Sites Remediation Act, 1996). However, the legislation was silent on redevelopment/rehabilitation.

While the Act was very clear on finding responsibility for paying for the remediation, there was little in the legislation that would encourage developers, lenders, the financial services sector or others to redevelop/rehabilitate one of these remediated sites. It was unclear whether a person or person(s) could be held liable for the unknowns after redevelopment/rehabilitation.

2.7 Current Policy and Regulatory Framework

2.7.1 Inhibitors to lending/Investing

There has been a lack of financial regulatory guidance on environmental risk. Federal legislation - including the Bank Act, Trust and Loan Companies Act, Co-operative Credit Associations Act and the Insurance Companies Act - contain similar requirements that the Board of Directors of a financial institution must establish and adhere to "investment lending policies, standards and procedures that a reasonable and prudent person would apply in respect of a portfolio of investments and loans to avoid undue risk of loss". However, beyond this generic standard of prudence, the federal statutory framework was noticeably silent with respect to environmental risk management in the financial services sector.

In August 1993, the CDIC (Canadian Deposit Insurance Corporation) published eight by-laws which established a comprehensive set of standards of

sound business practices for its members. However, these standards provide little guidance with respect to environmental risk management in lending activities of its member institutions.

The Real Estate Appraisals standard guidance with respect to environmental risk management was that "all appraisal valuation approaches used should reflect accurately circumstances respecting the land or property use". In their "Uniform Standards of Professional Appraisal Practice it was noted that "the typical appraiser does not have the knowledge or experience required to detect the presence of hazardous substances or to measure the quantities of such material. The appraiser, like the buyers and sellers in the open market, typically relied on the advice of others in matters that require special expertise". The message was clear. There were few qualified commercial real estate appraisers who also held professional technical credentials. As a result, the level of understanding of the technical nature of environmental conditions was and remains limited (Financial Services Sector and Brownfield Redevelopment, September 1996).

There were no measures or standards of performance concerning such management services as environmental audits, or the roles and responsibilities of the professions involved. The Canadian Institute of Chartered Accountants had begun to address this issue in a published Research Report on Environmental Auditing. Other related initiatives included the formation of the Canadian Environmental Auditors Association and the environmental programs of the Canadian Standards Association and the Internal Standards Association (Lender Liability for Contaminated Sites: Issues for Lenders and Investors, November 1992).

The federal government's Bill C-5 took priority over all other legislation across the country. Section 15(7) states: "Any claim against the debtor in a

bankruptcy, proposal or receivership for costs of remedying any environmental condition or environmental damage affecting real property of the debtor is secured by a charge on the real property and on any other real property of the debtor that it is contiguous thereto and that is related to the activity that caused the environmental condition or environmental damage" (Bill C-5). The lender would face the automatic devaluation of its loan security in an amount equal to the cost of remedying any environmental condition plus the automatic devaluation of security which may hold on contiguous property. Under this law, to the extent that the cost of remediation exceeded the value of the real property, the regulatory authority retained claim against the other assets of the bankrupt debtor which ranks equally with, and therefore diluted, the recoverable value of the claims of other creditors including financial institutions (Financial Services Sector and Brownfield Redevelopment, September 1996).

In general, the current policy and regulatory framework across Canada provides little effective guidance on the issue of environmental credit risk management prohibiting investment in not only brownfield remediation but redevelopment/rehabilitation as well. By heightening sensitivity to, but not providing mitigating mechanisms for, environmental credit risk, the negative bias of this framework has caused financial institutions to act from a position of risk aversion rather than risk management (Financial Services Sector and Brownfield Redevelopment, September 1996).

2.8 Advantages of Redevelopment/Rehabilitation

There have been some very real advantages to redeveloping/rehabilitating brownfield sites. These include improved environmental health, revitalized urban areas, limited urban sprawl, increased taxes, and optimized use of existing services offered. There are also some significant advantages to redeveloping brownfield sites as opposed to greenspace expansion. Brownfield sites are often

more cost effective given the fact that municipal services have been in place. Brownfield sites have often offered:

- a pool of workers within close proximity;
- a dense transportation system near by including transit for workers; and,
- access to a large market of commuters.

The redevelopment of large tracts of urban land has catalyzed other urban renewal and development projects thus increasing the likelihood that taxes, often in arrears, have been paid. Redevelopment has produced other spin-off revenues such as development charges and lot levies (The financial Services Sector and Brownfield Redevelopment, September 1996).

Toronto was a case in point that illustrated the potential benefits of brownfield redevelopment. In 1995, the City of Toronto estimated that all its industrial-zoned properties comprised more than 1000 hectares - about 15 percent of all the assessed commercial-industrial property in the city. Based on current, effective tax rates, including business assessment on industrial lands, the annual local taxes on Toronto's industrial properties amounted to more than \$150 million.

Many of Toronto's industrial-zoned lands have been underutilized and could be redeveloped for higher uses. Potential contamination issues have not been the only barriers to such development; the issue of timing has been a critical factor affected by market conditions and strength of the overall economy. In 1998, an estimate of the annual local taxes foregone on the City's brownfields, exceeded \$11 million annually (Greening Canada's Brownfield Sites, 1998).

Another example was Pacific Place, the former Expo '86 site in Vancouver. This site has been the home of various industries over the past 100 years including harbour, railway station, coal gasification plants, sawmills, metal industries, etc, which resulted in the contamination of portions of the site. This 66 ha site has been redeveloped mainly for residential use with some commercial facilities and recreational uses. The site remediation took place in a staged manner and followed the stages of the building project. The most contaminated area of the site was the former coal gasification plant which has been developed into an urban park, with soil vapour and ground water control systems to allow containment of contamination in place, thereby employing the risk assessment principle. Risk assessment and risk management has also been used at the rest of the site. The soil that was being excavated and treated/disposed of, was soil that had to be excavated for building foundations and two levels of underground parking. Most of the site required only a cover of surficial soils in order to eliminate the pathway for direct exposure to contaminated soil. This cover was a combination of buildings, pavement for parking and roads, as well as topsoil and landscaping (Removing Barriers to the redevelopment of Contaminated Sites for Housing, August 1996).

2.9 Barriers to Redevelopment/Rehabilitation

There have been a number of barriers to the redevelopment/rehabilitation of brownfield sites of which many have already been identified. These include:

- lack of approval process certainty and finality;
- uncertainty about liabilities. The principle of joint and several liability states that where a number of people share responsibility for a financial obligation, if some of them are unable to pay their portion, the creditor can obtain the balance from the others. The application of joint and several

liability has tended to deter people in the financial services industry from becoming involved with brownfield sites. This has limited the flow of capital and the availability of insurance for redeveloping brownfield and other contaminated sites;

- the process and costs of both the legal and technical aspects of redevelopment;
- lack of clear standards. Although sufficient scientific information has been available, the absence of clear standards to assess the cost of clean-up and exposure to liability is a major barrier to redevelopment. Consequently, municipalities have been unwilling to sign off on clean-ups and developers are loath to undertake them;
- lack of public information/education. The public has overreacted to information that some sites were contaminated. This has placed a stigma on the properties and deferred development indefinitely. Some information has been considered confidential. Property owners have been unwilling to share information with government officials if it will be made public; however this runs counter to the broader public safety issue;
- lack of leadership by example. Governments have set a poor example in dealing with their own contaminated sites (for example the Sydney, Nova Scotia tar ponds, Manitoba Hydro diesel generating sites). A shortage of funds and human resources meant that governments, companies and individuals all too often avoided coming to terms with these issues;
- there remains no clear system of incentives established by government that favour redeveloping/rehabilitating brownfields over other forms of urban infill and over developing rural land near urban areas; and

- brownfields tend to have been viewed as a private sector problem where, with some notable exceptions, government intervened at a regulatory, not a participatory, level. Few financial or economic incentives have been offered to redevelop/rehabilitate brownfields. As well, few creative solutions have favoured brownfield redevelopment/rehabilitation, and taxation policy at national, provincial and municipal levels has provided little encouragement (Financial Services Sector and Brownfield Redevelopment, September 1996).

2.10 Successful Brownfield Redevelopment/Rehabilitation

Successful brownfield redevelopment/rehabilitation in jurisdictions usually has the following common threads:

- legislative reform has been completed that determines liability and provides a cohesive and consistent framework;
- innovative tax incentive programs are in place to encourage redevelopment/rehabilitation;
- a philosophical shift by the financial services sector has happened to go beyond the traditional profit-based behavioral model and actively embrace the issue of public concern;
- an initiative by the financial services sector is in place to become more educated concerning environmental risk;
- an initiative by the insurance industry to be more innovative in the creation of new insurance products; and
- an initiative by lenders to more broadly use available insurance and other private sector risk transfer mechanisms has been implemented (The Financial Services Sector and Brownfield Redevelopment, September 1996).

2.11 Strategies to Encourage Investment

The most attractive brownfield sites are often little different from normal sites, in that they have suffered relatively light contamination requiring straightforward, inexpensive remediation while having the benefit of other external advantages related to location, community safety, municipal services, labour force availability, etc. It is likely that such sites would be acquired for prices close to the market norm for similar non-brownfield properties, reflecting the combination of the discount for the projected cost of remediation and some premium for the other positive features of the site. If sufficient information was available in the public domain to permit developers to readily identify such sites, they would require little, if any external, incentive for their redevelopment.

Other sites, by the very nature of their heavy contamination and lack of other external advantages have been the least attractive for development. Somewhere in between exists a range of sites with increasing degrees of contamination and differing combinations of externally derived advantages and disadvantages.

Strategies to encourage investment in brownfield sites have and must address the wide variety of factors which combine to determine market value. These strategies have been organized into two basic categories - direct and indirect. Direct strategies have generally been monetary in nature, aimed at improving the investors' rate of return and have included loans and/or loan guarantees, fees, tax incentives and the like. Indirect strategies aimed at reducing some of the risks for investors and have included regulatory reforms, voluntary cleanup programs, financial and liability assurances, and information services that helped potential investors better assess the risks.

2.11.1 Direct Incentives

A number of direct incentives have been considered and implemented across Canada and the United States to encourage brownfield redevelopment/rehabilitation. Direct incentives such as indemnities have been used to transfer risk through contractual arrangements in which one party undertakes to accept responsibilities which would normally accrue to another party for specified future events or risks.

Escrow or Trust Accounts at the time of sale or purchase of a brownfield site where a portion of the proceeds would be held in trust to be used for remediation of the property were reportedly used in an arrangement between the Ontario Ministry of Environment and Energy and a business in the Junction Triangle of Toronto - an old industrial/rail transportation corridor in the west end of the city.

Insurers have also re-entered the marketplace with various kinds of environmental coverages. Such products include:

- property transfer liability insurance;
- third party liability coverage for bodily injury or property damage occurring on-or-off-site;
- clean-up cost "cap" or "stop loss" insurance which provides insurance for costs of clean-up beyond an agreed cap; and
- landowner insurance coverage for the on-site acts or omissions of remediation contractors/consultants and for the off-site transportation/disposal of hazardous substance.
- Shared financing has been another direct incentive that involved cooperative funding among the landowner and one or more governmental agencies. For example, the City of Wyandotte (Michigan) and BASF Corp formed a three-way partnership with business, local and state

governments. Through the 1980s an agreement was reached with the state to allow clean up, monitoring and installation of on-going remediation systems on BASF's 84 acre site to provide for its redevelopment into a waterfront park and golf course. BASF paid for all preliminary hydrogeology and received \$2 million in state grants and the City raised the remaining \$4.5 million through Tax Increment Financing. Golf course fees will allow the project (including the park) to be self-supporting.

In the United States a variety of funding programs exist at the federal and state level to support brownfield redevelopment/rehabilitation. They have included trust funds, grants from local governments for site investigation and grants or loans for remediation. A considerable number of state-funded environmental projects have been financed by way of the establishment of Tax-Increment Financing Districts. A Tax Increment Financing District is a specified geographic or political area in which the formula for calculating property taxes has been increased by a specified amount for a specified period of time to raise additional tax revenues which have been dedicated to fund predefined public projects, generally of a developmental nature. Canadian municipalities have sometimes used similar financing arrangements to fund public works (e.g. sewers), but the practice did not generally involve financing environmental remediation or participation in brownfield redevelopment.

The Quebec government and the City of Montreal created a pilot project with a value of \$6,000,000 to encourage a new approach to dealing with brownfield sites. A risk analysis perspective and soil treatment rather than confinement was encouraged. In addition, a \$35 million federal-provincial funding program was created to deal with the rehabilitation of large contaminated orphan sites. This has encouraged the City of Montreal in the active acquisition

and redevelopment of brownfield sites. This work has provided models and benchmarks for future brownfield redevelopment (Greening Canada's Brownfield Sites, 1998).

Windsor Ontario has adopted a tax incentive program to encourage reuse of abandoned properties that have realty taxes in arrears. This has canceled that portion of realty tax in arrears which results in the total cost of the environmental clean-up exceeding the appraised value of the property (The Financial Services Sector and Brownfield Redevelopment, September 1996).

2.11.2 Indirect Incentives

A number of indirect incentives have also been available in various jurisdictions across Canada and the United States to support brownfield redevelopment/rehabilitation. One key advantage of this approach was the shift in risk away from owners/developers and the financial sector.

Many American states have put into place new provisions designed to encourage voluntary remediation of contaminated properties by reducing the risk and uncertainty for owners, developers and the financial services sector. In Canada, most provinces have implemented some strategies to encourage the cleanup of contaminated sites. The range has varied and included flexible clean-up standards, clean-ups tied to restrictions on future use, lender liability agreements, policies on site clean-up and the promise of certainty embodied in covenants not to sue.

The move to allow clean-up to vary with the site's future use defers the site's permanent remediation as the intended use is not the highest use (residential). An Environmental Protection Agency (EPA) document on "Guidance on Land Use" has had the goal of assisting in developing reasonable assumptions regarding anticipated future land uses. In the past the EPA has

based its cleanup decisions on the assumption that a site may someday be used for residential purposes, resulting in expensive, overprotective remedy. The document required EPA staff to talk with local governments about the likely future land use of a site and to consider land-use information in its remedy (US, EPA Directive No 9355.7-04 and the Brownfields Redevelopment Institute, April 1996). However, critics have argued that while this approach may offer a short-term savings to the developer, it provided less long-term certainty to lenders who may perceive that the clean-up liability issues were left at least partially unresolved. Others have been concerned at the signal that this may send to polluters in the future.

The approaches to clean up and redevelopment guidelines have also varied in the process used to assess the acceptability of the site assessment and in the approval of the proposed clean-up process and results. Some jurisdictions provided for a sign-off by the regulatory authority that the site has been cleaned up to acceptable levels. Others left this responsibility to the site owner or their consultants. Obviously, where an official sign-off took place there was greater assurance that future actions would not be taken by public bodies against the site and that the regulatory agency would accept some responsibility for the site conditions in the future. Clean-up requirements have also varied in their expectations for professional standards of practice and accreditation programs for practitioners that undertook site remediation.

There have been many comprehensive voluntary programs used as indirect incentives. Examples included Minnesota's Voluntary Investigation and Clean-Up Program which provided financial incentives (e.g. grants to cities or counties working with the program to approve a clean-up plan) and also offered 10 different types of liability protection in the form of letters, agreements or certificates tailored to the needs of the voluntary parties. The program had 23 staff members and about 700 sites. To date about 3,500 acres of property have

been signed off by the program which insures the developers and lenders against any administrative action by the state.

The Quebec Ministry of the Environment produced a preliminary document entitled "Project of a Policy for the Protection and Rehabilitation of Contaminated Sites" in March 1996. This report presented six proposals to provide economic incentives for the redevelopment of contaminated sites which amounted to a voluntary program, including certain conditions; the creation of a system of support owners who had limited financial means; the creation of a restoration fund; favoured redevelopment of orphaned sites; and, favoured development of infrastructure on brownfields rather than greenfields. This program, would provide a comprehensive strategy for brownfield redevelopment similar to examples seen in the United States.

2.11.3 Key Differences between Direct and Indirect Incentives

The key difference between direct and indirect incentives from the perspective of their beneficiaries - the financial institutions - has been that direct incentives were typically bi-lateral arrangements quantifiable in monetary terms and therefore were easily understood and incorporated into cost-benefit analyses, risk assessment or similar practices. Conversely, indirect incentives generally involved multiple parties, were non-monetary in nature, and their application and benefits have often not been clearly understood by the financial institutions' managers whose behaviors they were intended to influence. Accordingly, direct incentives have been seen as more successful in generating and sustaining positive reactions from financial institutions than indirect incentives. This has been particularly so in the risk averse Canadian financial services sector.

2.12 Summary

As illustrated in the literature review, there has been no single solution capable of meeting the needs of the public, governments, the private sector, and lending institutions in the redevelopment/rehabilitation of brownfield sites. The variety of potential solutions has involved value judgements, resolving differences of opinion, and agreeing on the means through which individual solutions have been evaluated (Lender Liability for Contaminated Sites: Issues for Lenders and Investors, November 1992).

Brownfield redevelopment/rehabilitation must have community-based support because in many cases the central issue is will, not expertise. Only a community-based process could overcome the political, bureaucratic, and psychological barriers. These bottom-up, citizen-led processes, must be combined with top-down government support if plans are going to be implemented and sites redeveloped/rehabilitated. In the end, however, governments still have the regulatory capability and financial incentives to promote/secure brownfield redevelopment/rehabilitation.

The literature review has identified a number of incentives that exist to encourage the redevelopment/rehabilitation of brownfields. These incentives have often included bilateral and multilateral arrangements with various stakeholders. In many cases partnerships have been the successful tool. These partnerships have been between industry, government, financial institutions, and others. A recent addition to these partnerships has been the NGO, however, the literature was silent on this welcome addition. NGO's have a unique role to play in partnering in the redevelopment/rehabilitation of brownfields. Chapter 4.0 attempts to fill the gap in the literature review on the NGO's role by documenting lessons learned through a case study on the Fort Whyte Centre/Domtar Inc. rehabilitation partnership.

CHAPTER 3.0

METHODS

3.1 Introduction

The following discussion details the methods that were used to examine the lessons for non-government involvement in brownfield redevelopment/rehabilitation. Attention was focussed on identifying the role and attitudes of stakeholders, reviewing the existing regulatory and policy framework, and conducting a case study documenting lessons from the Fort Whyte Centre's rehabilitation of the Domtar wood preservative treatment site in Transcona, Winnipeg.

3.2 Literature Review

The major stakeholders/partners in brownfield redevelopment/rehabilitation have been identified through the literature review and include:

- the financial services sector (banks, trust/loan companies, insurance companies, and securities dealers);
- local and provincial governments;
- developers; and
- the public.

The identification and discussion of the role and attitudes of these stakeholders was documented. Attention was paid to why many are reluctant to become involved and the obstacles that need to be overcome to encourage their involvement now and in the future.

3.3 Existing Regulatory and Policy Framework

Discussions were held with Manitoba Conservation to review the existing regulatory/legislative and policy framework in Manitoba on brownfield redevelopment/rehabilitation. Close attention was paid to the incentives in place and the barriers that remain. Research through the literature review also considered what incentives are in place to encourage stakeholders to participate in the redevelopment/rehabilitation of brownfields across Canada and the United States.

A review of the CCME's March 1993 recommendations and principles on contaminated site liability adopted by many provinces was also highlighted in the literature review. While these principles have brought greater certainty to stakeholders around liability and remediation, they remain silent on bringing greater certainty and security to those stakeholders that wish to be involved in the redevelopment/rehabilitation of brownfields.

3.4 Case Study

The majority of my research focused on the case study of the Fort Whyte Centre's rehabilitation of the Domtar wood preservative treatment site in Transcona, Winnipeg. From the case study, lessons of general application for NGO involvement in brownfields have been documented.

The case study considered why a well respected non-government organization such as Fort Whyte would want to have their reputation and name associated with such a site; how the affected community of Transcona was involved (through the Transcona Community Bioreserve (TCB) Residents Liaison Committee that was established to provide a mechanism for ongoing information exchange between senior management of the Fort Whyte Centre and residents living in the immediate vicinity of the Bioreserve); how government (i.e. the Department of Environment (now Department of Conservation)) was involved in

the remediation and rehabilitation of the site; and, how Domtar and the Fort Whyte Centre reached consensus with all parties and moved the partnership forward.

An historic overview of the Transcona site was completed. This included research of historic maps and aerial photographs dating back to 1928 and an examination of the past, present and future development patterns around the Transcona site. This information was used to get a better understanding of the redevelopment pressures and needs within the surrounding community.

Discussions with Domtar, Manitoba Environment, members of the community, and the Fort Whyte Centre were also documented in the case study. These were conducted through interviews where facts and opinions were taken into consideration. A total of eleven interviews were conducted which included two representatives from Domtar, three from Fort Whyte, three from government, and three from the community of Transcona. Documentation including letters, communiqués, proposals, formal studies, progress reports and media reports were used to corroborate and augment evidence received from other sources including the interviews.

CHAPTER 4.0

A CASE STUDY OF FORT WHYTE CENTRE'S REHABILITATION OF THE TRANSCONA DOMTAR WOOD PRESERVATIVE TREATMENT SITE

4.1 Introduction

The impact of brownfields on the environment, economy and social/health of communities has been well-documented. Recently non-government organizations have begun to evaluate whether or not they have a role to play in partnering in the rehabilitation of brownfields. While the literature review was silent on their role, one such organization, the Fort Whyte Centre in Winnipeg felt that they had a responsibility to get involved and partnered with Domtar Inc. in the rehabilitation of a 45 hectare old wood preservative treatment site. This chapter provides some insight into the partnership through the collection of responses to interviews with those directly involved, a review of related documentation through the literature review in Chapter 2.0, and additional materials collected to supplement the data from the interviews.

4.2 Domtar Inc.

Throughout the twentieth century, Domtar Inc. was known as one of North America's leading producers of preserved wood, newsprint and groundwood specialties, as well as construction materials (Domtar Profile 2000). Incorporated in 1929 as Dominion Tar & Chemical Company Limited, its roots go back a further quarter of a century to 1903 and the construction of a coal tar distillation plant at Sydney, Nova Scotia. In the 1930's, Dominion Tar relocated to Montréal and successfully weathered the Great Depression as Canadian industry geared up to support the Allied effort in World War II and, subsequently, to meet the demands of an unprecedented post war economic boom.

The 1950s were a period of sustained growth for Dominion Tar and marked the beginnings of the Corporation's expansion into the pulp and paper and construction materials businesses. In 1961, a complex multiple merger involving Dominion Tar, fine paper manufacturer Howard Smith Paper Mills Limited (already partly owned by Dominion Tar), newsprint maker St. Lawrence Corporation Limited and packaging producer Hinde and Dauch Limited resulted in the formation of one of Canada's first conglomerates. The name "Domtar" was officially adopted in 1965.

The Corporation has continued to restructure its operations. In the late 1980's Domtar constructed a world class paper mill in Windsor, Québec. As a result of this move, Domtar's new focus on its integrated forest products, fine papers and packaging businesses led, in the 1990s, to the full divestiture of its salt and other chemical operations, wood preserving, newsprint and groundwood specialties, and construction materials divisions (Domtar Profile 2000).

Throughout Domtar's transition and into the 1990's, Domtar also decommissioned a number of operations across North America including the wood preservative treatment site in Winnipeg. As a result of this process, Domtar established an environmental policy that stated that Domtar "shall conduct business in a manner that protects the environment, conserves resources, and ensures sustainable development. We seek continuous improvement in our environmental performance by setting, reviewing and updating our environmental objectives" (Domtar Web Site 2000). Domtar has committed themselves to:

- manage operations to comply with all applicable laws and regulations, with emphasis on prevention and to minimize adverse environmental impacts;

- identify, evaluate, and control potential environmental risks and implement appropriate corrective measures;
- promote and develop awareness, leadership, and accountability among managers and employees with respect to environmental protection;
- communicate with employees, customers, suppliers, the community, and public officials to build greater mutual understanding of environmental issues;
- participate in the development of governmental environment policies based on scientific standards and realistic implementation time frames;
- continue support for research aimed at improving process efficiency and environmental protection measures and apply such knowledge to our product stewardship;
- conduct environmental audits to confirm that our management practices meet policy objectives, legislation and the principles of sound management, and to report to the Board of Directors on the environmental status of operations at such frequency as determined by the Board (Domtar Web Site, 2000).

4.3 Transcona Wood Preservative Treatment Site - Historical Overview

The former Domtar wood preserving facility in Transcona was located on a 45 hectare site approximately 16 kilometers east of downtown Winnipeg (figure 3). At the time of its establishment and throughout most of its operation there was no residential development near the site. However, in the late 1970's residential development began to the west and south, while vacant land remained and industrial development took place to the north and east as shown in (figure 4).

The site was first developed as a wood preserving operation in 1909 and operated from 1911 to 1976 when the property was sold to local developers. A series of aerial photographs show the level of development around the site from

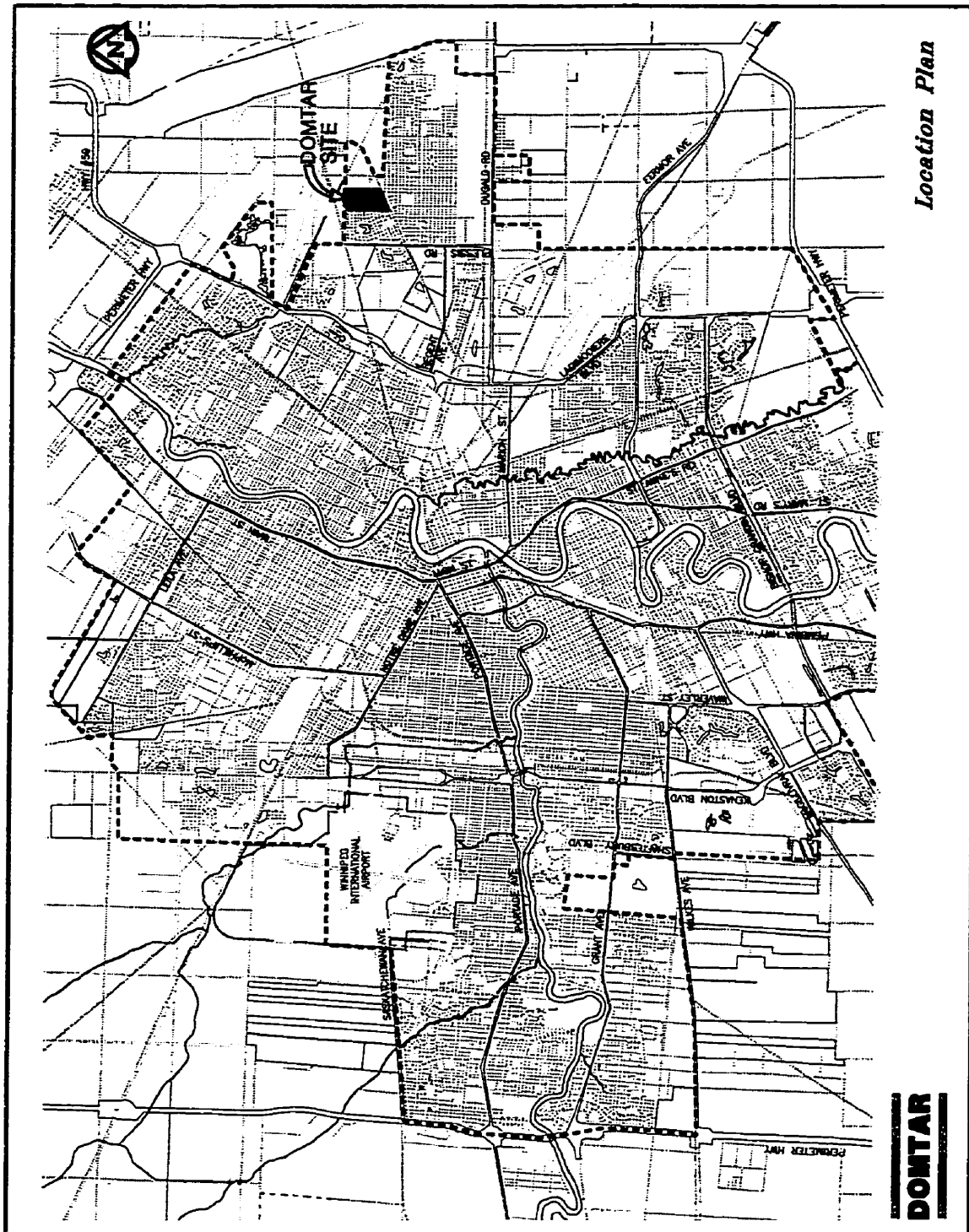
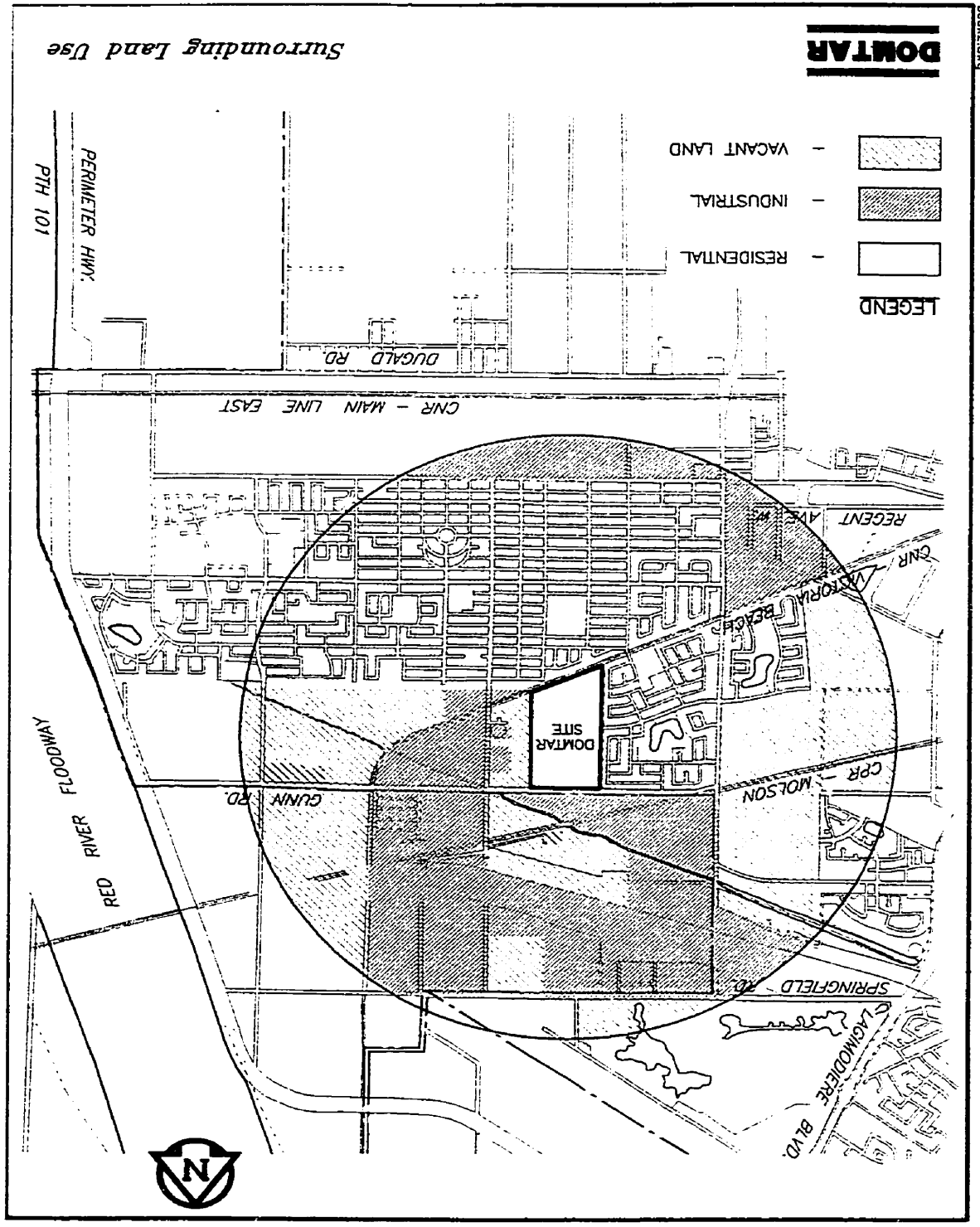


Figure 3: Fort Whyte Centre's Bioreserve located on the old Domtar wood preservative treatment facility site in Transcona, Winnipeg (Domtar, 1997).

Figure 4: Map of existing residential, industrial and vacant land surrounding Domtar's wood preservative treatment facility (Domtar, 1997).



1928 to 1995 (Figure 5). As shown in Figure 5, Domtar's site was fully developed by 1950. In 1966, the first sign of residential development appears near the southern border of the Domtar property. By 1979, the entire southern portion of the property was developed and the infrastructure as well as a number of homes had been put in place along the western side of the property. By 1995, residential development had completely surrounded the eastern side of the site. The majority of the contamination was located along the east side of the site during remediation.

The wood preserving operation initially used creosote and petroleum based creosote to treat railroad ties and heavy timber in the main plant area of the site. In the mid 1950s, pentachlorophenol (PCP) was also used at the site.

Historical activities on the site that were consistent with industry practice at the time may have released wood preserving chemicals on the property. These practices included:

- (1) discharging treated wastewater from the operations to ditches and evaporation ponds;
- (2) spilling wood preserving chemicals during transport or processing operations;
- (3) allowing wood preserving chemicals to drip from treated lumber in the treated lumber storage area; and,
- (4) disposing of debris contaminated with wood preserving chemicals in the debris disposal area (Summary of Proposed Remedial Plan, October 1997).

One of the consequences of the treatment was significant soil contamination by these chemicals. An aerial photograph of the site that was taken shows the general location of the various operations which were conducted on the site

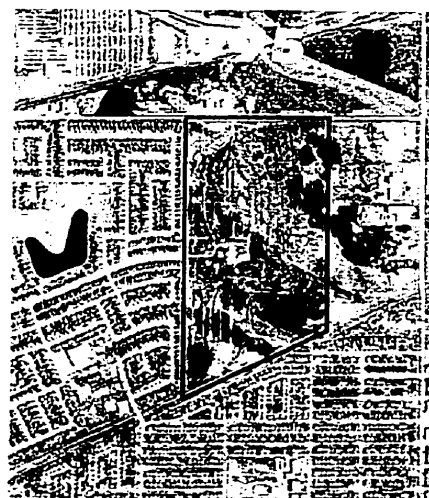
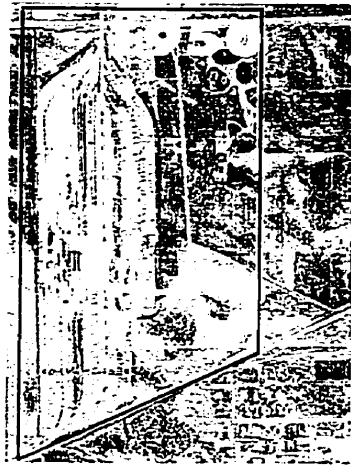
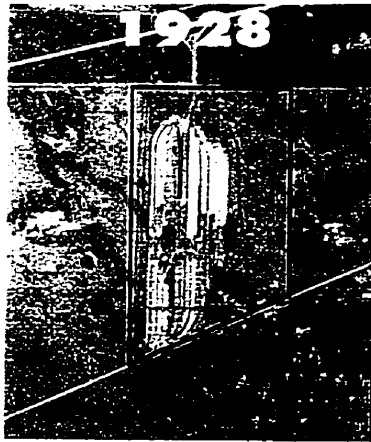


Figure 5: Series of aerial photographs taken between 1928 and 1995 of the Domtar wood preservative treatment facility site in Transcona, Winnipeg.

including the main treatment area, treated lumber storage, debris disposal, evaporation ponds, and drainage ditches (Figure 6).

In 1976, Domtar sold the property to real estate developers after shutting down its operations. A proposed program to place an engineered cap - made up of a clay overlay to cover the impacted soil - was approved by the province after the sale of the property. This program was never implemented because it was tied to redevelopment of the land by the new owners. The redevelopment never occurred. As a result, Domtar undertook measures to ensure protection of public health and safety and attempted to treat the highly impacted soil through a number of different methods. These attempts were unsuccessful and were abandoned in the fall of 1995 costing Domtar millions of dollars.

After years of negotiations and attempts to remediate the site to ensure public health and safety, Domtar repurchased the property in 1995. Between 1995 and 1997 a series of public meetings, open houses, consultations and negotiations took place between the community, Manitoba Environment (now Manitoba Conservation), the City of Winnipeg, Domtar, and Fort Whyte. This process ultimately lead to an agreement on the engineered remediation solution.

A technical Advisory Committee was established by Manitoba Environment to provide a scientific and technical review of Domtar's proposed remediation plan. They conducted a detailed review through 1996 and endorsed the remediation plan submitted by Domtar. Provisions included that it be constructed to the highest technical standard and that financial assurances be in place to protect the integrity of the remedial works.

The Committee further recommended that the "future end-use be compatible with the proposed on-site management of the contaminated soil to

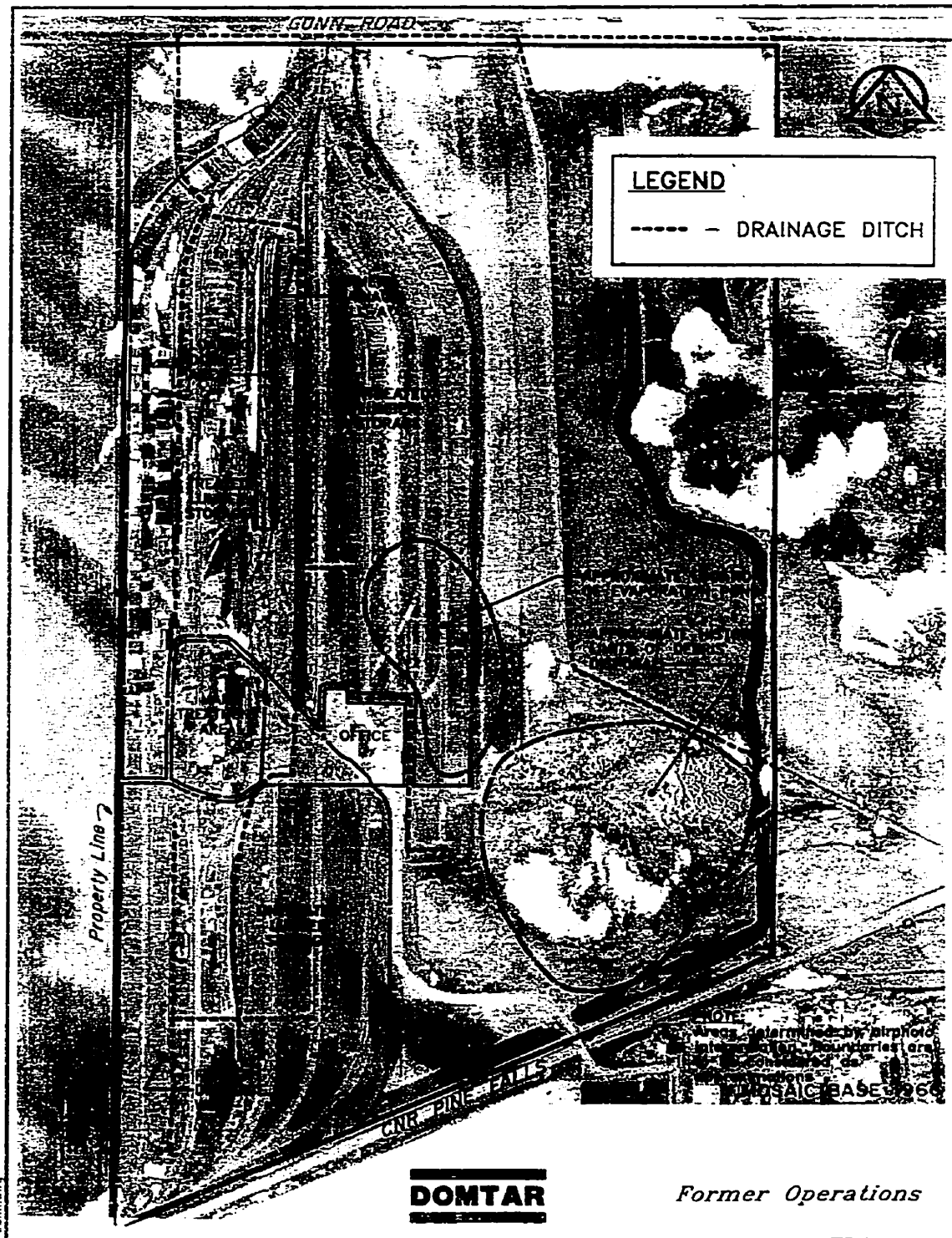


Figure 6: Aerial photograph of the site taken in 1996 showing the location of the various operations conducted on the Domtar site (Domtar, 1997).

ensure the integrity of the remedial works and the continued protection of public health and the environment in the area. Upon completion of the public review process and support of the local community for the end-use plan, the department will issue a Director's Order to Domtar to carry out the remediation plan endorsed by the Technical Advisory Committee. Manitoba Environment will ensure that the future end-use of the site remains compatible with the proposed on-site management of contaminated soil and is consistent with parkland/recreational land use zoning" (Summary of Remedial Plan, 1997).

As a result of Manitoba Environment's stipulation that the existing parkland/recreational zoning must remain, community support for the end-use was required. As there was limited community support for a number of previously proposed redevelopment opportunities, in 1996 the Fort Whyte Centre was approached by Domtar to develop in partnership an end-use plan for the Transcona property. A chronology of the events that followed is located in Appendix V.

4.4 Fort Whyte Centre

Fort Whyte, or the Wildlife Foundation of Manitoba as it was previously known, was incorporated on April 27th, 1966 by a Special Act of the Manitoba Legislature. The private, non-profit Foundation was established to provide facilities and financing for education in the science and art of conservation of wildlife and its habitat. Over the past 34 years this mandate has continued to evolve to recognize the interconnectedness of all forms of life, including human life. "The Fort Whyte Centre is dedicated to providing programming, natural settings and facilities for environmental education and outdoor recreation. In doing so, the Centre promotes awareness and understanding of the natural world

and actions leading to sustainable living” (Fort Whyte Centre, 2001). It’s current mandate is to:

- Offer, as a primary focus, environmental education programs to students, youth groups and the general public;
- Offer outdoor experiences that encourage individuals to enjoy, understand and sustain the natural world;
- Offer exhibitions and programs that address critical environmental issues; and,
- Offer outreach programs to maintain and enhance biodiversity.

As a pilot project, the first Fort Whyte Centre was established in 1966 in partnership with Canada Cement Ltd. Situated on 200 acres just off McCreary Road in Winnipeg, the centre is located on land originally owned and operated by Canada Cement. Over 100,000 visitors a year take advantage of the Fort Whyte Centre’s 4 lakes (clay pits), woodlands, meadows, and wetlands. Fort Whyte has become one of Canada’s leading environmental education facilities focussing on natural history, conservation, sustainable living, biodiversity, climate change, water conservation, soil conservation, and outdoor recreation. This NGO recognized the interdependencies between a healthy environment and a healthy economy.

4.5 Fort Whyte’s Bioreserve Proposal

“Having turned a sow’s ear into a silk purse at its present site and witnessed the educational and recreational opportunities that can arise from a rehabilitated landscape, the Fort Whyte Centre viewed the rehabilitation of Domtar’s Transcona site into a proposed Bioreserve (Figure 7) as a unique, visionary and compelling opportunity” (Bio -Reserve Proposal, 1997). Figure 7 depicts an overhead shot of the site once restored and the various habitats and plantings that would eventually grow and mature on the site.

In their proposal for the Bioreserve, Fort Whyte outlined their belief that:

- there was a need to restore damaged or degraded environments for uses beneficial to the health of the surrounding landscape and the community as a whole;
- it was only through the shared responsibility of industry, government and the community that long-term sustainability of degraded environments could be attained;
- the Transcona Community Bioreserve would support current programming at Fort Whyte designed to encourage Winnipeg residents to look upon their city landscapes as interconnected wildlife habitat, and to assist them in enhancing the biodiversity of their neighbourhoods;
- the opportunities the Bioreserve held in serving as an outdoor biodiversity classroom with schools in the area was significant; and
- the Bioreserve would support Fort Whyte's continuing effort to facilitate similar approaches to degraded or idle landscapes and provide another example of partnering in the restoration of a former industrial site.

A series of four photographs were taken to show what the site looked like prior to remediation. The first is a shot of the site looking north that includes grassland and one of the original roads into the property (Photograph 1). The second is a picture of the existing wet meadows that Fort Whyte proposed to maintain for wildlife habitat on the site (Photograph 2). The third is a shot of the residential development on the west side of the property impacted by the contamination and remediation process (Photograph 3). Finally, the fourth photograph is an example of the remaining drainage ditches that spread a great deal of the contamination on the property (Photograph 4).



Photograph 1: existing grassland and gravel road on proposed bioreserve site looking north.



Photograph 2: existing wet meadows on proposed bioreserve looking north east.



Photograph 3: residential development along the west side of the proposed bioreserve.



Photograph 4: existing drainage ditches from old wood preservative treatment facility.

Fort Whyte saw a series of benefits that were mutually desirable to the community as well as themselves. These included:

- a long-term environmentally acceptable end-use that offered year-round enhanced public access to a community bioreserve/greenspace;
- a unique 45-hectare Bioreserve that would serve as a repository of species and genetic bio-diversity within the community;
- enhanced public use;
- complementing existing natural assets in the area; and
- offering a readily accessible outdoor classroom to area schools.

As well, this site would offer Fort Whyte new marketing opportunities in the opposite end of the city from the Fort Whyte Centre and the ability to attract new visitors to the Fort Whyte Centre.

4.6 Results and Discussion

4.6.1 Key Person Interviews

In an attempt to fully understand the overall conclusions by the stakeholders around the Bioreserve, key person interviews were conducted with representatives from Domtar and their consultants, the community of Transcona, Manitoba Conservation (formerly Manitoba Environment), and Fort Whyte Centre. In order to ensure a proper sampling of stakeholders involved in the Bioreserve, 11 interviews with 23 questions were conducted. The survey instrument is attached (Appendix II). Individuals were interviewed on their perception of the events and issues that led up to the Bioreserve. Respondents were not randomly chosen, but were selected because of their knowledge of the project.

The interview questions used were developed, in part, from the commentary of the Fort Whyte Centre's Chief Executive Officer and the

transcripts of public meetings held in 1997 by Domtar with the community of Transcona and various other stakeholders. The questions were approved by the University of Manitoba Ethics Committee. The interview questions primarily sought to identify the level of satisfaction on the Domtar/Fort Whyte partnership and to provide feedback on the process and changes that might enhance such a process leading to the rehabilitation of other sites. The questions also tried to get at the costs and benefits that were created by the rehabilitation, and the applicability of the process and end-result for other sites. A copy of the letter requesting an interview is attached Appendix III.

The interviews were primarily conducted at the individual's place of business. However, where time did not permit the interviews were conducted over the phone. The interview method selected for this study can be described as a standardized open-ended interview with the exact wording and sequence of questions determined prior to the interview. All respondents were asked identical questions in the same order.

The questions followed a fixed and logical sequence to assist the interviewee. Introductory questions were designated to elicit general opinions and observations. The subsequent questions addressed a number of different factors including:

- bringing clarity to the process that led to the rehabilitation of the site;
- value and extent of public involvement;
- why Fort Whyte chose to get involved;
- economic, environmental, social impacts of the Bioreserve;
- economic, environmental, social benefits/risks;
- barriers faced - perceived or otherwise; and,
- future applications of the approach.

All of these factors have been combined to determine the lessons for non-government involvement in brownfield rehabilitation.

4.6.2 Matrix

In order to extract key data from the interviews, the following Matrix (Figure 8) was developed to assist in categorizing and determining the level of interest expressed by those interviewed between November 20, 2000 and December 1, 2000. The Matrix covered 22 different categories of issues and concerns. An "x" indicated which categories each individual commented on during his or her interview.

Responses varied to many of the questions. The matrix was not designed to judge or analyse the interviews beyond indicating that the particular issues or concerns were raised. The analysis that follows provided a more specific look into the categories with discussion and direct reference to comments received during the interviews. Key words were identified across the vertical access while the interviewee was identified by number down the horizontal side. To provide greater clarity to the categories in the Matrix, each category has been further described in Appendix IV.

4.6.2.1 Context/Background

In order to better understand some of the responses by the individuals interviewed, it is again important to identify two major factors that significantly influenced the process and ultimately the end-use of the site. As had been discussed:

- (1) Manitoba Environment made community acceptance of an end-use plan a condition and part of the remediation order. In other words, Domtar was required to secure the support of the community for an end-use of the site before Manitoba Environment would sign-off on the remediation order.

Matrix Summary

Environmental Issues										Social/Health Issues															
Interview 1	Interview 2	Interview 3	Interview 4	Interview 5	Interview 6	Interview 7	Interview 8	Interview 9	Interview 10	Interview 11	Totals	long-term site management	greenspace is a sought after commodity	educational/recreational value	regulatory impediments	regulatory incentives	limit risk	negative perception removed	benefit/asset to entire community	provincial/community investment ie. time and money	health	political involvement	perception of partnership	community consultation and involvement	Totals
											10	x	x	x				x	x	x	x	x	x	x	6
		x									4	x		x							x				6
	x			x	x						3														3
	x	x									9	x	x	x					x	x	x	x	x	x	6
	x										6	x						x							6
	x	x									6								x						6
	x	x	x								7	x	x	x											7
	x	x									5														5
		x									6														6
Totals	8	7	10	1	4	2	2				68														

Figure 8: Matrix of issues identified by those interviewed.

	Economic Issues			Matrix Summary			General Issues			Total
	end-use	affordable/sustainable end-use	compensation	zoning	future liability	selling feature for the community	effective/practical approach to redevelopment	spin-offs for stakeholders	future applications of this approach	
Interview 1	x	x	x	x			x		x	6
Interview 2		x					x	x	x	4
Interview 3	x			x		x	x		x	5
Interview 4	x				x			x	x	4
Interview 5	x					x	x		x	4
Interview 6	x	x		x			x		x	5
Interview 7	x	x	x				x		x	5
Interview 8	x	x	x	x		x	x		x	7
Interview 9	x	x	x	x			x	x	x	7
Interview 10	x	x		x		x	x	x	x	7
Interview 11		x	x				x		x	4
Total	9	8	5	6	1	4	10	4	11	58

Figure 8 (continued): Matrix of issues identified by those interviewed.

This increased the stakes for Domtar as they searched for an acceptable end-use plan.

- (2) The site had already been zoned parkland/recreational further limiting the end-use options. As a result, in 1997 Domtar approached Fort Whyte based on a recommendation by their legal counsel, to explore partnership opportunities in order to identify an acceptable end-use for the Transcona site.

4.6.2.2 Results Summary

In order to analyse the data received from the interviews, 4 major headings including environmental, social/health, economic and general issues were developed with a total of 22 categories. From the 11 interviews, the categories were mentioned by the interviewees 126 times out of a possible 242. 30% of the responses were located under environmental issues, 30% under social/health issues, 26% under economic issues, and 20% as general issues. On average the interviewees identified 11 of the possible 22 categories with one interviewee identifying 16 and one only 7. Based on the responses it would appear that the environment, economy, and social/health issues were of relatively equal importance to those involved and interviewed. The results will be discussed in greater detail below.

4.6.2.3 Economic Issues

As had been mentioned, Domtar repurchased the site from developers in 1995. After many years of failed remediation attempts by Domtar it was becoming evident that the level of contamination and the costs associated with removing the contamination to allow for residential or commercial development were too high. As one interviewee put it “the fact that the site was located in the middle of a residential community provided a whole new set of dynamics and issues for all stakeholders”.

As the matrix showed, ten of the eleven respondents identified end-use as the significant economic issue that required serious debate and consideration. From these interviews it was apparent that the community did not want any future industrial development on the land. This message had been received by Domtar and Manitoba Environment early in the process. Given that the land had already been zoned parkland/recreational, any real economic development opportunities for the site were virtually eliminated.

Ironically, Domtar had also been very clear that they were not a developer and thus were not prepared to finance a costly end-use. As one official from Domtar put it, "ideally the site would have been sold with full control given to someone else for redevelopment. However, given that the site was located in the middle of a residential development, and that the remediation plan called for the contaminated soil to remain managed on site, an end-use had to be found by Domtar".

The community also wanted the company to pay for the damage done. As a number of residents put it "in the beginning of the process a number of residents wanted Domtar to fully compensate the community at a level befitting of the damage done environmentally, economically and socially. The level of trust between the community, Domtar and government was very low. The community felt that this would likely be their last chance to go after Domtar." The compensation the community looked for was not individual compensation but in the form of an expensive end-use for the site paid for by Domtar. Many residents used the public meetings that were held in 1996/97 as an opportunity to apply serious pressure on Domtar. When Fort Whyte entered the picture and tabled the Bioreserve proposal, as one interviewee put it "the Bioreserve took the wind out of the sails of those individuals that wanted to get even with Domtar". As one government official articulated during the interview, "Fort Whyte was the knight on the white steed that all stakeholders had been looking for".

As a number of interviewees described, the community was somewhat split in the beginning over what the end-use should look like.

- (1) Domtar proposed to construct a number of tennis courts and a nature trail on the site (Figure 9). However, at the time the community still had a bitter taste in their mouths and had very little interest in the company's proposal. Many were concerned that Domtar's proposal only utilized about 1/8th of the actual property.
- (2) A handful of residents were pushing for the idea of a golf course. Domtar agreed to fund a feasibility study but was not prepared to pay for the golf course fully as they were not a developer. As a result, the golf course was not a financially viable alternative. At the same time, it did not benefit the entire community, only those who golfed.
- (3) Finally, Fort Whyte's proposal for the Bioreserve came along and gained wide ranging support from the community. As a non-profit NGO, Fort Whyte had an outstanding reputation in Winnipeg as a leader in environmental education focussed on conservation, sustainable living, biodiversity, water conservation, soil conservation, outdoor recreation, etc. "They forced people to think about the benefits of a cost effective long-term solution as opposed to an expensive unsustainable option designed largely to 'get even' with Domtar".

Eight of the eleven individuals interviewed identified an affordable/sustainable end-use as very important. As one individual put it "the community did not want to be stuck holding the bag if something went wrong on the site 20 or 30 years from now". The 50-year lease that Fort Whyte signed with Domtar, laid a number of community concerns to rest as the sustainability issue was addressed. As one official with Fort Whyte explained "we had to carefully weigh the potential future liability associated with managing the site during the 50-year lease before agreeing to proceed. Once the assurance that any liability

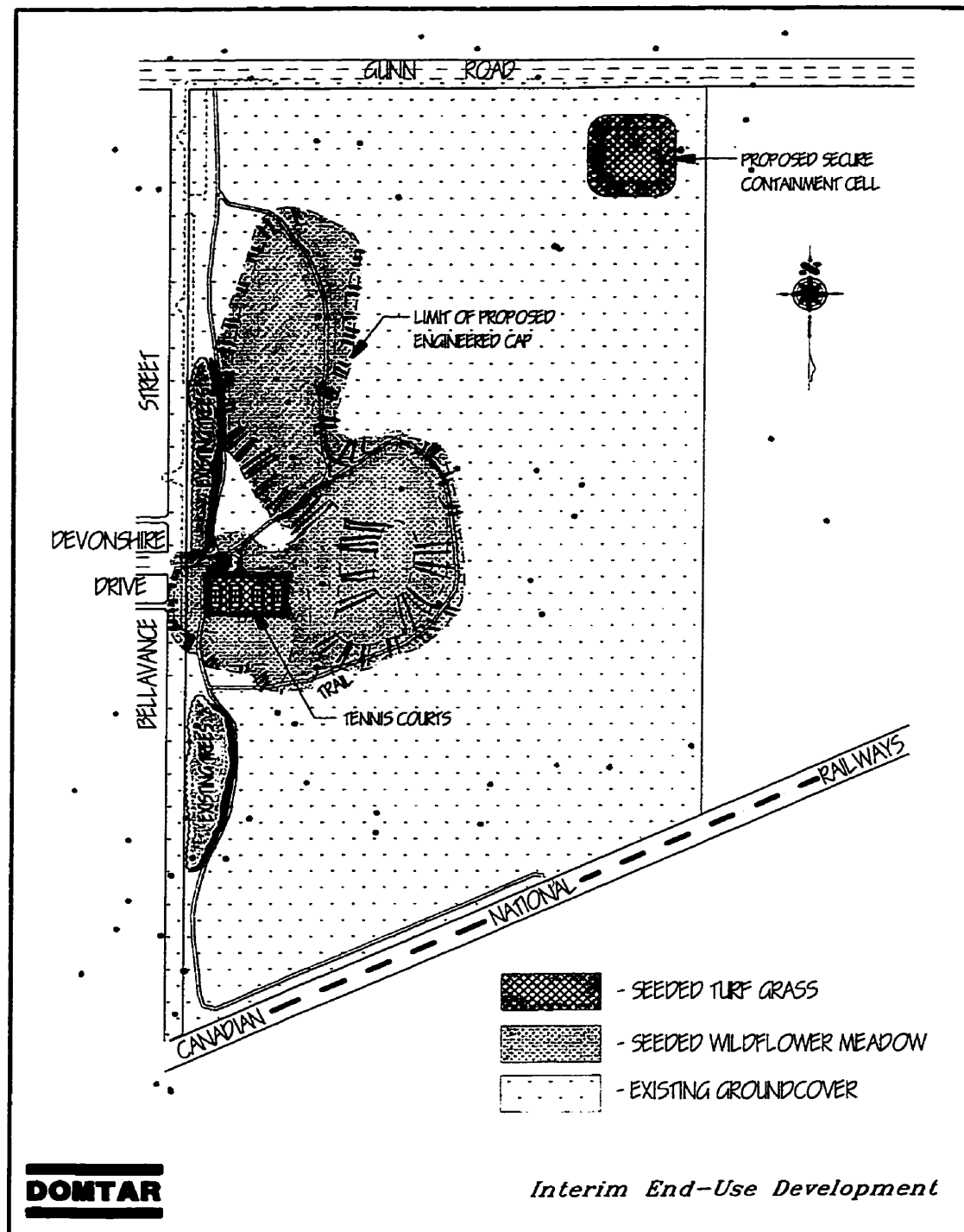


Figure 9: Domtar's first proposed end-use plan for the wood preservative treatment site (Domtar, 1997)

associated with further migration of contaminants during this 50-year lease period would remain the full responsibility of Domtar we agreed to move forward with the partnership". Surprisingly however, this was only identified by one individual as an issue during the interviews.

Four of the eleven interviewed identified the Bioreserve as a selling feature for the community. As opposed to the negative perception/association that the site had brought to the community for the last 20 years, as one individual stated "the community now had a very unique piece of land to enjoy and real-estate agents have used it to attract potential buyers and no longer frighten them off". Realistically property values have not and will not likely change significantly. However, homes in the area can now actually be sold.

4.6.2.4 Environmental Issues

As a result of many failed attempts by Domtar to remediate the site throughout the 1990's, it was very difficult for the company to convince the public that the final technical remediation solution would work. As officials from Manitoba Conservation indicated, "whatever end-use was chosen it had to avoid disturbing the remedial work completed and minimize the external impact to residents." As a result of the decision to leave the contaminated soil on site, the community and Manitoba Environment needed to ensure that the site remained managed for the long-term. Eight of the eleven interviewed identified the need for long-term management as a major issue and essential to an acceptable end-use. Officials from Domtar also indicated during the interview that they needed to control their liability and limit future risk by combining long-term environmental management and an appropriate end-use for the site.

Unlike most remediation orders handed out by government, this one was negotiated with Domtar over an 18 month period. This made the process much smoother in determining the end-use of the land as the province's position was

clear during that period. The remediation order included leaving the property zoned as parkland/recreational and the requirement that the community support the end-use. The possible options for redevelopment of the site were limited as a result.

As discussions began to unfold with the community around the end-use for the site, negative environmental perceptions began to fade as the focus changed. Two of the eleven interviewed identified this as a significant turning point after more than 20 years. "The sentiment changed from all that was wrong with the site to what the potential future use of the site could be and the benefits to the community".

The Bioreserve was the third option presented to the community. In the beginning not all those interviewed were supportive of the proposed Bioreserve. Some wanted a more manicured environment such as a ball park or community centre. As the Bioreserve began to gain popularity there was general agreement in the community that the site should be preserved in its natural state. The Fort Whyte Centre's proposal was to undertake landscape rehabilitation through the development of Aspen parkland, an indigenous berry orchard, and wet meadow shrubs among other plantings (Figure 10). At the same time, Fort Whyte was also proposing to develop a gravel trail, seasonal trails, a timber bridge, benches, and wildlife amenities such as bird feeders and other nests (Figure 11).

Fort Whyte's proposal was to speed the natural process up and allow recreational and educational activities to take place on the site to the benefit of the entire community. Fort Whyte saw the site as an opportunity to guarantee that a significant portion of acreage would be set aside as greenspace for generations to come. As one interview indicated "as natural areas of land continue to decrease in the city, this site will become a sought after commodity by many looking for communities with greenspace".

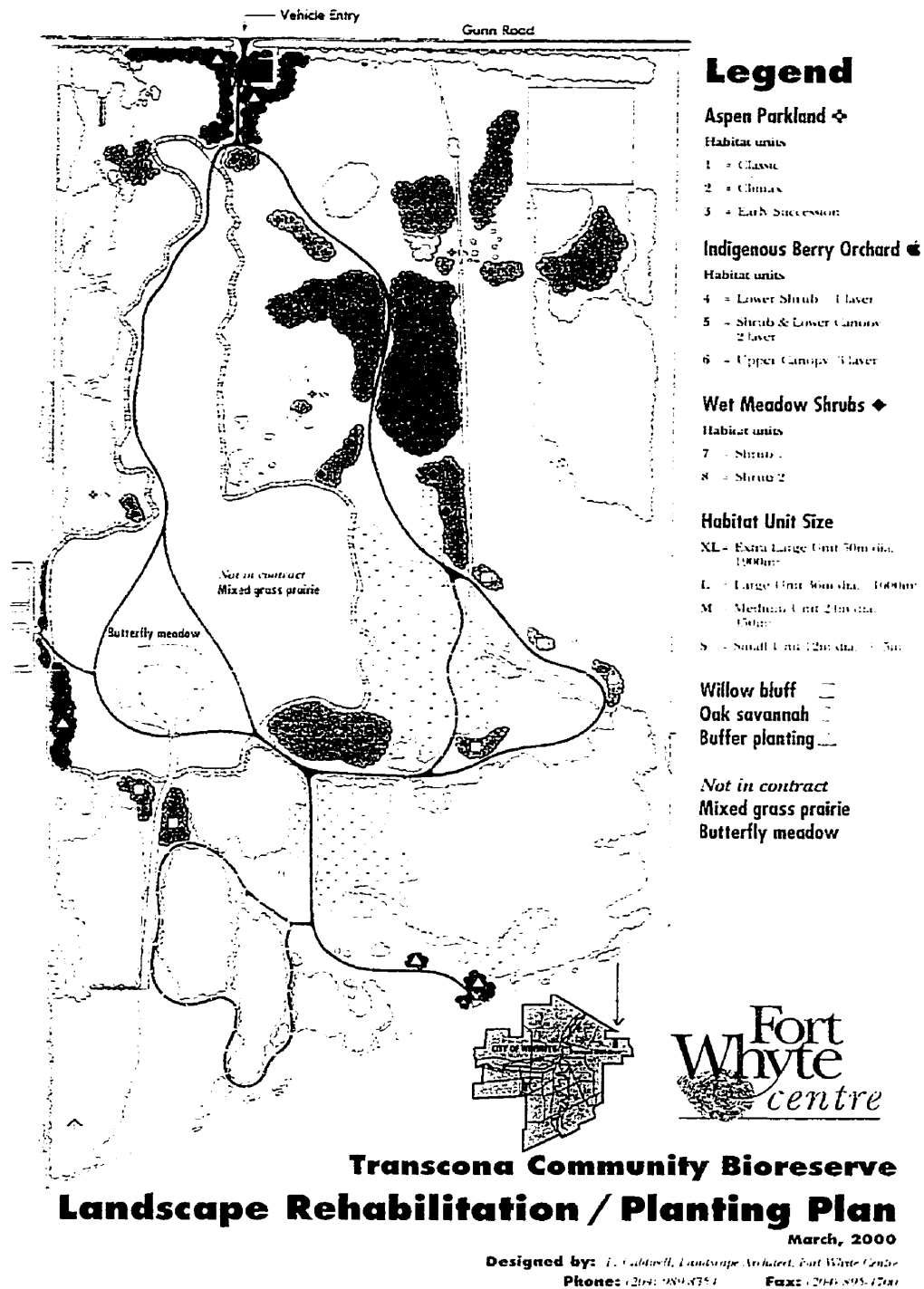


Figure 10: Fort Whyte Centre's detailed landscape rehabilitation and planting plan for the proposed Bioreserve (Fort Whyte Centre, 2000)

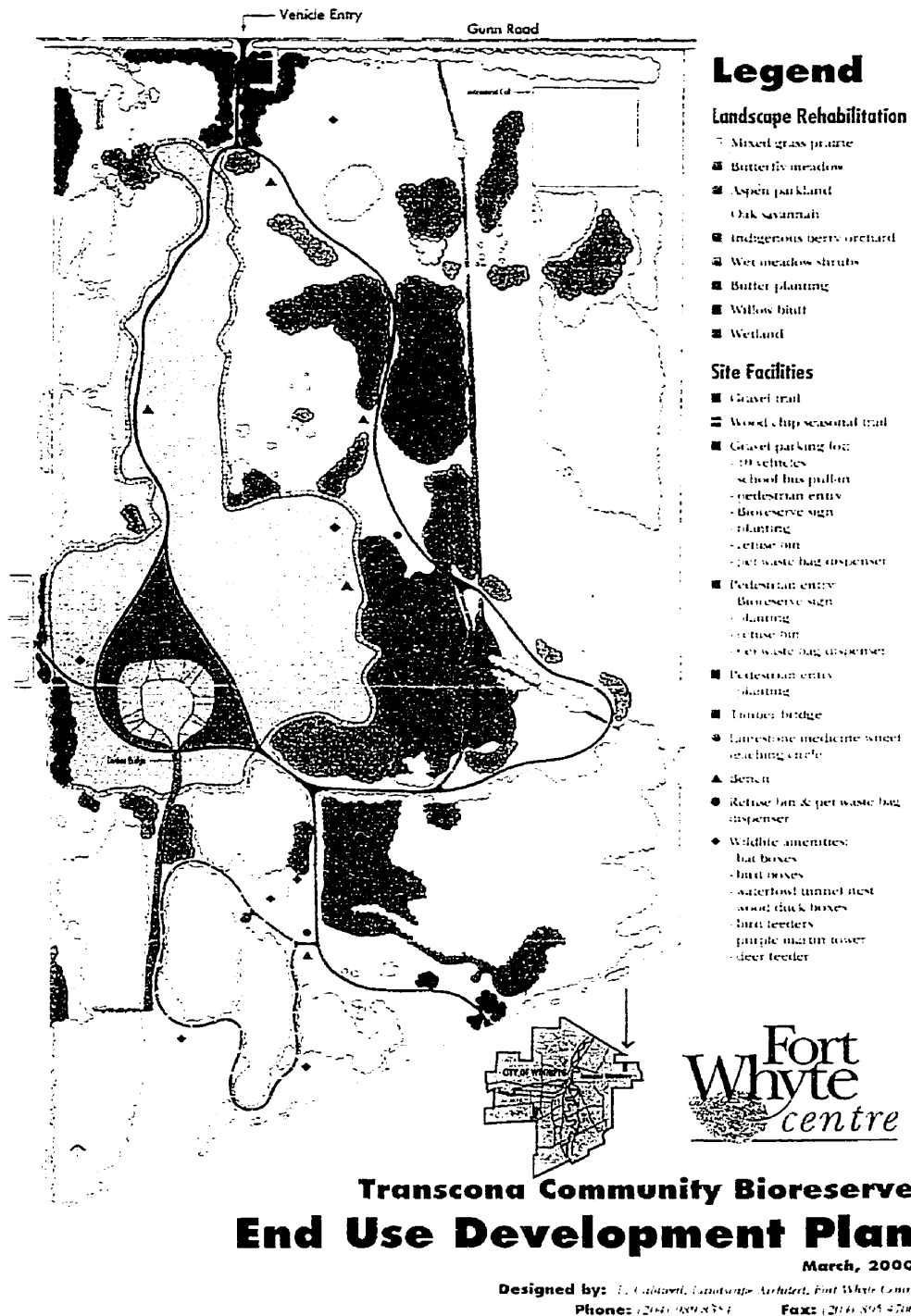


Figure 11: Fort Whyte Centre's end-use development plan for the Bioreserve (Fort Whyte Centre, 2000)

The majority of those interviewed identified the environmental education value of the Bioreserve as a real selling feature that the community supported. Ten of the eleven interviews identified educational value as a positive end-result. As one interviewee put it “anything that can increase diversity and educational opportunities in an urban environment is positive”. John W. Gunn school has used the site almost daily for some kind of activity, including as an outdoor laboratory, outdoor classroom and for research. The Bioreserve has also fit into Fort Whyte’s programming. For example, the Bioreserve fits well with Fort Whyte’s Winnipeg Wild initiative that was designed to assist and encourage communities to enhance back-yard biodiversity.

Six of the eleven interviewed expressed some level of concern over the possible risks associated with the Bioreserve. A number were concerned over the day to day management of the property and the monitoring of the site given that Fort Whyte’s head office was located on the opposite side of the city and no permanent staff would remain at the site. Officials with Fort Whyte were concerned that community expectations needed to be realistic and consistent with the proposal on the table. Fort Whyte did not intend to set up another satellite office and/or interpretive centre. Ironically, Environment officials were pushing Fort Whyte to further tone down their redevelopment plans. They were concerned that Fort Whyte stay within the parameters of what was allowable to ensure the integrity of the engineered cap and containment cell on the property.

One of the other major risks with the Bioreserve was to the reputation of the Fort Whyte Centre. As previously mentioned, Fort Whyte had a reputation in Winnipeg as a leader in environmental education. If the Bioreserve and the various plantings and activities on the site were unsuccessful, and the long-term monitoring and management functions went beyond the anticipated and agreed upon budget, Fort Whyte could be tarnished and financially at risk. “What if the engineered solution failed”? Others remained concerned as to whether Fort

Whyte and Domtar could maintain a positive working relationship for 50 years, as well as whether or not Fort Whyte would be around for the full period. In the end it was generally agreed that the risks were minimal as long as the site remained monitored and exposure to the contamination was prevented.

There were a number of regulatory controls in place during the mid 1990's that impacted the Bioreserve. In the matrix (Figure 8) they have been classified as impediments and incentives. Of the eleven individuals interviewed only one identified the regulatory controls as an impediment. This was not so much in reference to the rehabilitation phase but the remediation phase. It was felt that the regulatory review process was too long and at times too cumbersome. As one official from Domtar commented "It could have been even more cumbersome if the province had had a soil remediation site. If this had of been the case, the site could have been completely remediated for residential or commercial development. The contaminated soil could have been removed cost effectively leaving future development options open beyond the parkland/recreational zoning. As a result, re-zoning would have garnered significant debate and confrontation". Given that the contaminated soil was to remain on site and that the property had already been zoned parkland/recreational, residential or commercial development was not an option.

In terms of incentives, the fact that the remediation order called for Domtar to reach agreement with the community on an end-use before signing off on the order, created a direct incentive for Domtar to find an acceptable end-use plan. This approach led to the partnership between Domtar and Fort Whyte. The legislative/regulatory controls were flexible enough to accommodate the needs of both Domtar and Fort Whyte. As one official from Manitoba Conservation put it during the interview, "it is important to keep in mind that this experience was the result of many years of evolution with respect to attitudes and legal controls across Canada. While it has been difficult moving from command and control,

we have learned a great deal and continue to adapt the legislative/regulatory processes to create an environment that encourages people to work together to find solutions to environmental issues”.

4.6.2.5 Social/Health Issues

As discussed in the economic and environmental issues sections of the Matrix and interviews, community support for the end-use was mandatory. As a result, there was a great deal of political involvement and consultation with the community around the end-use. A number of the interviewees pointed out that the political involvement was very confrontational and at times self serving. One respondent from the community recalled a meeting that took place in 1990/91 between concerned residents and the opposition Environment Critic. “From this meeting an additional meeting was called between Manitoba Environment and Domtar. The issue quickly turned into a political struggle over how many political points could be scored at the government’s and Domtar’s expense. Unfortunately, this action brought an unwelcome spotlight onto the community and we were caught in the middle”.

To make matters worse, a number of politicians jumped on and off the bandwagon depending on the level of public interest and number of newspaper headlines. As a result, the community decided to work on their own and formed the Lakeside Meadows Residents Liaison Committee. They acted as advocates on behalf of the community and participated in the Technical Advisory Committee (TAC) meetings between Domtar and Manitoba Environment. The TAC was established to determine the acceptable remediation plan and end-use. This further highlighted the importance Manitoba Environment placed on transparency of the process and open communication between the parties.

Domtar was also concerned over the political spotlight. “Their initial reaction was to consult with the community and others as little as possible once

the site hit the front page of the newspaper". Domtar did not want to negotiate through the media. In the end, officials from Manitoba Environment insisted that public meetings be held with the community. These were not to be formal public hearings but informational meetings where the community had an opportunity to discuss the remediation and end-use possibilities with Domtar, Manitoba Environment, politicians, health experts, and the like.

As concern grew over the possible explosive nature of the consultative process, Domtar hired a communications professional to link to the community and Manitoba Environment. This individual designed Domtar's communications plan, interviewed a number of residents in the community, co-ordinated the open houses, and anticipated present and future concerns. In the end, nine out of the eleven interviewed identified community consultation and involvement as one of the most important components in achieving an agreed upon end-use. It appears that the openness, transparency, and meaningful involvement of the community paid off for all involved. "The public meetings allowed the community to express themselves and their concerns/frustrations. They were very receptive of the process and the ultimate end-result".

When Domtar first approached Fort Whyte they knew that the Centre had the expertise and experience to move the project forward. Naturally, real concerns around the public perception of such a partnership were raised by those involved with Fort Whyte. They had built a solid reputation in the city and many members of their board were reluctant to jeopardize that reputation. "Fort Whyte had a long and positive track record of following through on its commitments. Along with Fort Whyte came a great deal of credibility". As they looked further into this possible partnership they saw a very positive fit with their own mandate. "Fort Whyte saw the site as a real opportunity to guarantee that this naturally diverse acreage would be set aside for the entire community to enjoy as greenspace for recreational and educational activities".

Shortly after Fort Whyte's proposal was accepted by the community, Fort Whyte established the Transcona Community Bioreserve Residents Liaison Committee. This committee was mandated to act as a liaison between Fort Whyte and the community of Transcona as the Bioreserve developed. As one member of the committee commented "we continue to act as a conduit between Fort Whyte and the community, meet ever 3-4 months to provide comments on the site development plan as it progresses, and are involved in the design process".

Finally, from a physical and mental health perspective, the Bioreserve has put the community's mind at ease knowing the land was safe, functional and useable once again. "The risk to health had to be ensured, but even more importantly the community had to feel reassured that the any future risk to health was also being dealt with appropriately".

4.6.2.6 General Issues

There were three issues that did not appropriately fit into the environmental, economic or social/health issues identified through the interviews. These three included:

- future applications of this approach;
- spin-offs for stakeholders; and,
- whether this partnership was an effective/practical approach to redevelopment.

With respect to future applications of this approach, all of those interviewed identified this as a model for the rehabilitation of brownfield sites. In particular it was felt that this approach and solution would work well in urban residential settings. It was also recognized that a bioreserve would not be

practical for all sites. “It would depend on the type of soil, the property size, location, etc. If this site had been located in the middle of an industrial park it would have been difficult to justify turning it into a bioreserve as industry continued to use existing greenspace for industrial development pushing cities out further and further”. Government officials pointed out that “this redevelopment was done in a flexible regulatory framework. If the process had been formalized through public hearings, success would have been much more difficult to achieve as stakeholders entrenched positions and the environment became less conducive to cooperation and working together”.

The spin-offs for the stakeholders were and are significant. For Domtar they were able to secure a partner with a very well respected name and reputation. This plays a significant role in reducing hostilities towards the company and brought credibility to the process. As one official from Domtar put it “the partnership allowed us to move beyond the finger pointing to concrete action towards an acceptable end-use. It became a rallying point for the community”.

Fort Whyte has also seen a number of spin-offs, including expanding their marketing reach to the opposite end of the city. The partnership has allowed for significant environmental enhancements to the community. It was anticipated that the site and the process that led up to the end-use would serve as a real life example for other unresolved brownfields that need a solution.

Fort Whyte had always played a leadership role and followed through on its commitments. “Given that our own head office is situated on a former industrial site, we felt we had a responsibility to act. If not us then who?” This has now opened the door for Fort Whyte to play this role in the future by providing their expertise as consultants to other companies and communities

facing similar circumstances across Canada. They have received calls from across the country asking for information on the Bioreserve and the process.

While the financial arrangements between Fort Whyte and Domtar remain confidential, a number of the individuals interviewed pointed out that the arrangement would have had to have been significant enough for Fort Whyte to take on this kind of risk, in particular considering the possible impact on its reputation and future fundraising activities.

The interviews asked the question whether or not the approach was effective and practical for other sites. Ten out of the eleven individuals interviewed concluded the approach was effective and practical while one did not comment. Officials from Domtar felt “it was the only approach feasible given that the site was located in the middle of a residential community”. If the community had been left with an abandoned remediated site with no end-use plan this would have been unacceptable to government and the community. Manitoba Environment’s stipulation that the end-use must be developed and supported by the community was the first major step in the project’s success. Domtar did not have to pay legally for the end-use as it was their property. They could have chosen to fight the remediation order that stipulated the need for an end-use in the courts for years. However, agreeing to seek out a partner on the end-use silenced many of their most vocal critics.

Fort Whyte’s Bioreserve carried the day based on the practicality of the solution. Fort Whyte was taking a risk. The community recognized that and came to support Fort Whyte’s efforts. In the end, it has been cost-effective, produced major community, environmental and economic benefits, and required little maintenance to sustain it well into the future.

4.7 Summary of Case Study

This case study was undertaken to determine whether or not NGO involvement in brownfield rehabilitation could be an effective and practical approach for future use. Based on the individual interviews, it was clear that Fort Whyte's involvement and ultimately their proposed Bioreserve provided an acceptable economic, social/health, and environmental solution that satisfied the needs of the community, government, and Domtar. All of the interviews enthusiastically endorsed the approach and felt that future applications should be encouraged if not packaged for others to consider and use.

It was also recognized that this type of approach may not necessarily work in all cases. If the zoning of the property had not been determined prior to proposing options for the end-use, the community would likely have been split on the end-use as many more options could have surfaced. The community was clear from the beginning of the process that they did not want to see industrial development take place on the site again. If the site could have been cost-effectively remediated to allow for residential or commercial development, additional concerns would likely have been raised by the community. Manitoba Environment's decision to manage the contaminated soil on site, as well as their requirement in the remediation order for community support of the end-use, were also major factors in the success of the partnership approach.

There were benefits in the partnership approach for all stakeholders. These included that:

- Fort Whyte was able to "practice what they preached" and gained additional marketing opportunities in the opposite end of the city from the Fort Whyte Centre;
- Domtar was able to satisfy Manitoba Environment's requirements through the partnership with Fort Whyte and cost effectively redevelop the site;

- The community has been left with a piece of land that was managed by Fort Whyte and used for purposes that have benefited the entire community; and,
- Manitoba Conservation (formerly Manitoba Environment) had their conditions met including community support for the end-use. This has also provided the department with an opportunity to see the results of years of modifying legislation and regulations away from command and control, to encouraging these kinds of partnerships and long-term solutions.

4.8 The Approach/Model

For decades environmental groups, the public, government and various other stakeholders have been at loggerheads with each other over impacts of development on the environment. Environmentalists have assumed that executives from mining or forest product companies cared nothing for the environment. Some industry representatives assumed environmentalists cared nothing for the jobs and opportunities that development created, or the financial realities that business faced. Government at all levels assumed that agreeing to a common vision and solution to the problems facing us would be impossible. This case study has proven that those assumptions are false. A common vision and solution was possible in this case.

As a non-profit foundation, Fort Whyte was able to instill a great deal of trust, hope and confidence in the process. Fort Whyte recognized the interdependencies between the environment, economy and the health of the community. They were in an ideal position to assist the community and protect a large piece of land in an urban setting. Other alternatives had been proposed but not widely accepted by the community and Domtar was running out of options until Fort Whyte entered the picture.

In the Domtar/Fort Whyte partnership approach, the interdependence between the environmental, economic and social/health issues allowed the stakeholders to work together towards a common goal. The “development or environment - make a choice debate” had no place in this case. Manitoba Environment’s decision to ensure that the future end-use of the site remained (a) compatible with the proposed on-site management of contaminated soil; and (b) consistent with the existing parkland/recreational land use, was a significant catalyst behind the success of this approach. As the data from the case study was analysed, it became abundantly clear that the Fort Whyte/Domtar partnership mirrored the concept and application of sustainable development.

4.8.1 The Bioreserve and Sustainable Development

The Bioreserve and the approach utilized recognized the interdependence of the economy, environment and societal health and well-being. As a result of people working together a sustainable long-term solution has been found. The approach forced the stakeholders involved to look at the process and work together in making decisions around the end-use and long-term management of the site. It included:

- effective communications with all stakeholders including the community;
- an integrated rather than a fragmented approach to the consultation process, breaking down artificial boundaries;
- combining appropriate knowledge and skills from a variety of disciplines;
- a willingness to work cooperatively with others to identify and address common concerns and opportunities with the site;
- ensuring that well informed decisions were made; and,
- encouraging stakeholders to question well established ways of doing things allowing for increased creativity and alternatives not considered otherwise.

4.9 Summary

Whether or not an acceptable end-use would have come about without Fort Whyte's involvement is difficult to say given the number of variables presented in this case. During the interviews, a number of individuals commented that if the Bioreserve had been proposed by Domtar or an advocacy group of some sort, the likelihood of community acceptance would have been greatly reduced. The community had already been through a great deal of distress and was very concerned that the end-use be in the community's best interest. Fort Whyte's ability to and reputation in partnering with industry, government, the community and educators made the Bioreserve a reality.

This case provides a number of lessons for non-government organization involvement in the redevelopment of brownfields and has opened the door to future opportunities not just for Fort Whyte, but other non-government organizations with solid reputations within their communities and beyond.

CHAPTER 5.0

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The impact of brownfield sites on the environment, economy and health/well-being of communities has been well-documented. This practicum research was undertaken in part, to address increased public expectations around the need to take action to redevelop/rehabilitate brownfields. Specifically, the research was conducted to determine what role, if any, NGO's can play in partnering with various stakeholders on an appropriate end-use for remediated brownfields.

Particular emphasis was placed on the case study undertaken on the Transcona Bioreserve in chapter 4. As part of this case study, a number of interviews were conducted with the stakeholders including the community, government, Domtar and Fort Whyte. These interviews were conducted to examine and assess the effectiveness and practicality of the partnership. A literature review was also completed to supplement the findings of the case study.

The Transcona Bioreserve and the successful partnership formed between the Fort Whyte Centre and Domtar, has resulted in a sustainable end-use for the site. This rehabilitation project has improved the health of the surrounding landscape and met the needs of the community impacted. As the partnership and end-use were unique in application, a number of lessons for future NGO involvement have been identified with specific recommendations to follow in this chapter.

Fort Whyte continues to consult with the community of Transcona as the Bioreserve develops. It is anticipated that the Bioreserve will be completed in

2003. As a result of their success, Fort Whyte has received inquiries on the Bioreserve from other communities and companies across Canada facing similar circumstances.

5.2 Conclusions

5.2.1 Fort Whyte/Domtar Partnership

The role and attitude of various stakeholders has played a major part in determining the success or failure of brownfield redevelopment/rehabilitation. To date, no single solution has been developed that is capable of meeting the needs of all of the various parties. As a result, stakeholders have and continue to look for private and public alliances. The Fort Whyte/Domtar partnership was one such example.

While the partnership can be replicated, it is unique in a number of ways. First, having turned a former industrial site into its head office, Fort Whyte was in a unique position to provide the expertise necessary to bring government, the community, and Domtar together around an acceptable end-use for the site. Second, Fort Whyte's Bioreserve proposal was unique in that the site was not redeveloped - in the economic sense of the word - for industrial, commercial, or residential purposes. Instead, the site was rehabilitated into a use beneficial to the health of the surrounding landscape and the needs of the community affected. While the economic benefits may not have been as evident, rehabilitation provided significant value to those affected including Domtar. Finally, this partnership did not require the buy-in of the financial services sector as Domtar was paying for the costs. Their absence allowed for greater flexibility in determining the appropriate/acceptable end-use.

5.2.2 Stakeholders

As the literature review highlighted, a number of other stakeholders have tried to respond to the needs of those involved with brownfields. The insurance

industry has determined the need for environmental insurance. However, they have developed a basic set of underwriting guidelines that limit what is covered.

The banking industry remains concerned that lenders in Canada have been held liable as owners or operators of contaminated facilities in which they held a security interest. As a result, clean up costs have ranked ahead of creditors security when the assets of the company were divided. Their level of interest in financing redevelopment/rehabilitation has been low.

In the eye of a developer many of the characteristics found in brownfield sites such as location and infrastructure have been appealing. However, most continue to pass over these sites in favour of greenfield settings where there is less financial risk and more certainty for development.

5.2.3 Government's Role

While the picture has been somewhat bleak for those involved in brownfield redevelopment/rehabilitation, some progress has been made. The literature review outlined the work of the Canadian Council of Minister's of the Environment (CCME). In the mid-1990's, CCME designed a number of principles to reduce the level of uncertainty and unpredictability around liability. Principles such as "polluter pays and fairness" have been the basis upon which governments have formulated their respective legislation, including in Manitoba. While the legislation has been effective in determining and assigning liability for remediation, the legislation remains silent on redevelopment/rehabilitation activities. According to provincial officials, the end-use has been left out of legislation intentionally to allow for creative solutions and partnerships such as the one formed by Fort Whyte and Domtar. While this approach may have worked for the Bioreserve, it may not in other cases.

A number of factors influenced the end-use of the property. First, Manitoba Environment's decision to restrict the zoning of the land to parkland/recreational in the remediation order, played a major role in Domtar's decision to approach the Fort Whyte Centre. This decision ultimately led to the successful rehabilitation of the site. While Domtar remains liable as the owner of the property, the risk associated with rehabilitating the site was significantly reduced.

Second, the impact of the provincial government's decision to allow the level of remediation to be based on the site's future use cannot be underestimated. This decision deferred the site's permanent remediation, which would have required the full removal and destruction of all contaminated soil on the site. As the intended use was not the highest use - defined as residential development - clean-up decisions were based on the zoning designation and not the assumption that someday the land would be used for residential development. This decision allowed for the cost-effective remediation of the site and moved the focus of the community and Domtar to end-use and rehabilitation.

As one case study interviewee commented, "if the provincial government had decided to force remediation to a standard acceptable for residential development, we would still be in court today with no end-use plan in sight and a community left wondering if there would ever be a solution".

Third, there was an additional incentive for Domtar to work with the community in determining the end-use as the community's support was tied to the sign-off of the remediation order. As discussed, the Department's Technical Advisory Committee recommended that the completion of a public review process and support of the local community for the end-use plan was necessary before signing-off on the remediation order (Summary of Remedial Plan 1997). Domtar clearly needed a solution that was acceptable to the majority of the

community. Given that there was a great deal of mistrust between the community and Domtar, their initial attempts to find a solution were unsuccessful until Fort Whyte came along.

5.2.4 Effectiveness and Practicality of the Domtar/Fort Whyte Partnership

The Domtar/Fort Whyte partnership outlined in chapter 4 was very effective and practical. A number of indirect incentives identified in the literature review were utilized effectively by Domtar and Fort Whyte. In particular, the incentives included flexible clean-up standards and a clean-up that was tied to restrictions on future use of the land. Fort Whyte seized a rare opportunity to practice what it had been preaching for years. The opportunity to turn a significant portion of land in the middle of a residential community into a natural, educational Bioreserve was very appealing. Fort Whyte recognized the need to restore degraded environments in Manitoba for uses beneficial to the health of the surrounding landscape and communities. Their reputation, presence and direct involvement moved the community's focus from suspicion and mistrust to the real possibilities and the benefits that Fort Whyte's proposed Bioreserve would bring to the community.

Before proceeding, a number of Fort Whyte's concerns around environmental liability and risk needed to be addressed. These concerns included ensuring that the redevelopment did not impact the engineered solution and that Domtar remained liable for any further leaching of contaminants on site. As Fort Whyte was simply leasing the land, Domtar remained the owner thus liable for any future spread of the existing contamination.

The 50 year lease signed between Fort Whyte and Domtar provided the acceptable economic social/health, and environmental solution to the community of Transcona and government. The Bioreserve presented a sustainable/

affordable end-use that brought all stakeholders together. This remains a rare occurrence.

While the Bioreserve was the ideal solution under the circumstances, it does not mean that all existing brownfields should be converted into bioreserves. The end-use will be determined by many factors including level of contamination, location and cost. However, the process and role that non-government organizations can play in gaining the trust of a community effected, proposing solutions, and mediating differences is critical to successful redevelopments.

As a non-government organization, Fort Whyte was able to instill a great deal of trust, hope and confidence in the process and end-use proposed to the community. They recognized the interdependencies between the environment, the economy and the health of the community. As a result of their decision to participate in the rehabilitation, the end-use has provided for the long-term sustainability of a degraded environment that otherwise may not have been possible.

5.3 Recommendations

Stakeholders in brownfield redevelopment/rehabilitation must work together if successful redevelopment/rehabilitation is to occur. There are a number of things that can be done to encourage these partnerships and make them easier to form. The following recommendations are based on lessons learned from the Fort Whyte/Domtar partnership.

- 1. A more predictable legislative and public policy regime should be put in place in Manitoba to allow for the redevelopment/rehabilitation of brownfields to occur.** There remains little in Manitoba's legislation that would encourage developers, lenders, the financial services sector, or

NGO's to acquire and redevelop/rehabilitate a remediated site. In particular, the legislation needs to clarify whether or not a person or person(s) considering the purchase or lease of remediated land, could be held liable for the unknowns if the remediated solution failed.

2. **In order for partnerships with NGO's to work in the rehabilitation of a brownfield, there is a need for government to clearly stipulate that community support is required for the end-use.** One of the main reasons for the success of the Fort Whyte/Domtar partnership was the fact that the remediation order called for Domtar to reach agreement with the community on an acceptable end-use before government was prepared to sign off on the remediation order. This created a direct incentive for Domtar to find an acceptable end-use plan and led to the partnership between Domtar and Fort Whyte.
3. **Government should establish a clear system of incentives that favour redeveloping/rehabilitating brownfields over other forms of urban infill and/or developing existing greenspace.** Direct incentives such as tax credits, fees, loans or even grants are examples of what have been used to encourage redevelopment/rehabilitation. Indirect incentives such as flexible clean-up standards and clean-ups tied to restrictions on future use, can also be used to support brownfield redevelopment/rehabilitation. In some cases both can be used effectively. Indirect incentives were used successfully in the Fort Whyte/Domtar case study as the site was remediated to acceptable standards for the parkland/recreational zoning designation. This designation

restricted commercial, industrial, and residential use making the Bioreserve an affordable end-use option.

4. **Where possible, it is important that the future zoning restrictions on property should be determined before proceeding with a remediation order.** This will assist in determining clean-up standards, the community can be fully consulted, and the end-use can be determined. In the case of the Domtar site, if the property zoning had not already been determined and restricted, Domtar would have likely moved to have the property re-zoned industrial or commercial. This would have been strongly opposed by the community resulting in significant conflict. Determining the zoning would also allow stakeholders to determine whether or not they wanted to acquire these properties and invest in them.

5. **The Real Estate Appraisals standard guidance with respect to environmental risk management should accurately reflect circumstances respecting the land or property use.** Appraisers should be required to receive a license or additional training/credentials to better assess environmental conditions before valuing a property. This would bring greater certainty to those considering purchasing a brownfield.

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APPENDICES

Appendix I

Canadian Council of Minister's of the Environment's

- Recommended Principles

The CCME's Core group on contaminated/brownfield site liability came up with the following principles and recommended that they be used as a model upon which individual provincial governments could develop legislation and regulations that would be consistent across Canada to address liability. These principles included:

1. The principle of "polluter pays" should be paramount in framing contaminated site remediation policy legislation.
2. In framing contaminated site remediation policy and legislation, member governments should strive to satisfy the principle of "fairness".
3. The contaminated site remediation process should enshrine the three concepts of "openness, accessibility, and participation".
4. The principle of "beneficiary pays" should be supported in contaminated site remediation policy and legislation, based on the view that there should be no "unfair enrichment".
5. Government action in establishing contaminated site remediation policy and legislation should be based on the principles of "sustainable development", integrating environmental, human health and economic concerns.
6. There should be broad net cast for the determination of potential responsible persons. However prior to entering the actual liability - allocation stages of the process, the following persons should have a conditional "exemption" based upon clearly defined statutory exemptions:(a) Lenders; lenders who hold a security interest in the property of a borrower should be granted a pre-foreclosure exemption

from personal liability, beyond the outstanding balance of the debt, unless the lender had actual involvement in the control or management of the business of the borrower; and (b) Receivers; Receiver-Managers, Trustees (including trustees acting in a fiduciary capacity); these persons should be exempt from personal liability for pre-existing contamination, and only be liable if they fail to take reasonable steps to prevent further contamination, or otherwise fail to satisfactorily address ongoing environmental concerns at the site.

7. Remediation legislation should provide the necessary authority and means to enable the recovery of the public funds expended on the remediation of contaminated sites from those persons deemed to be responsible for such sites. Furthermore, member governments should strive to achieve environmental priority over all other claims or charges on an estate that has entered receivership or bankruptcy.
8. Member governments should pay particular attention to the design of a process which will facilitate the efficient cleanup of sites and the fair allocation of liability. Further, this process should discourage excessive litigation to the maximum extent possible by promoting the use of alternative dispute resolution procedures.
9. A list of factors should be established for use in the liability-allocation process to allocate the liability of responsible persons depending upon the specific circumstances of their involvement, and in relation to the involvement of other responsible persons. The following list of "liability allocation factors" is suggested for use in cases where there is more than one responsible person to be considered in the allocation process. The list may not be exhaustive.

Liability Allocation Factors:

- a) when the substance became present at the site;
- b) with respect to owners or previous owners, including, but not limited to:

- i) whether the substance was present at the site when he took ownership;
 - ii) whether the owner ought to have reasonably known of the presence of the when he took ownership;
 - iii) whether the presence of the substance ought to have been discovered by the owner when he took ownership, had he taken reasonable steps to determine the existence of contaminants at the site;
 - iv) whether the presence of the substance was caused solely by the act or omission of an independent third person;
 - v) the price the owner paid for the site and the relationship between that price and fair market value of the property had the substance not been present at the site at the time of purchase;
- c) with respect to a previous owner, whether that owner sold the property without disclosing the presence of the substance at the site to the purchaser;
 - d) whether the person took reasonable steps to prevent the presence of the substance at the site;
 - e) whether the person dealing with the substance followed the accepted industry standards and practices of the day;
 - f) whether the person dealing with the substance followed the laws of the day;
 - g) once the person became aware of the presence of the substance, did he contribute to further accumulation or the continued release of the substance;
 - h) what steps did the person take on becoming aware of the presence of the substance including immediate reporting to and cooperation with regulatory authorities;

- i) whether the person benefited from the activity resulting in the contamination, and what was the monetary value of their benefit;
 - j) the degree of a persons contribution to the contamination, in relation to the contribution of other responsible persons; and
 - k) the quantity and toxicity/degree of hazard of the substance that was discharged or otherwise released into the environment.
10. Alternative dispute resolution (ADR) procedures should be made available by member governments as a means to resolve issues of liability for contaminated sites. For example, a four-step allocation process could be implemented as follows:
- Step 1 - Voluntary allocation - Upon designation of a contaminated site, and designation of responsible persons, the affected persons, should be given a reasonable time - bound opportunity to allocate the cost of cleanup among themselves.
 - Step 2 - Mediated Allocation - Failing Step 1, the persons will be required to enter into an allocation process whereby an independent person or body will mediate a settlement.
 - Step 3 - Directed allocation - Failing Step 2, the persons will be required to enter into an allocation process whereby an independent person or body will make an arbitrated apportionment of liability based upon its findings.
 - Step 4 - Failing Steps 1, 2, and 3, liability will default to joint and several liability among all responsible persons.
11. Discretion should be retained by member governments to designate sites as contaminated sites; however, for the purposes of better predictability, governments should clarify their policies for determining which sites are to be designated, with a view to eventually harmonizing their site - designation processes. These site - designation policies should designate sites based upon (a) risk to human health; and (b) extent of environmental risk. In addition, there should be public input into the evaluation of

significant sites being considered for designation, as well as public notice when a site designation occurs.

12. A "responsible person", who completes the cleanup of a contaminated site to the satisfaction of the regulatory authority, should be issued an official "certificate of compliance" by that authority, certifying that the site has been remediated to the required standards. These certificates, however, should expressly state that they are based on the condition of the contaminated site as at the date of issuance and that the remediation undertaken met the standards of the day; and that the responsible person may be liable for future cleanup ("prospective liability"), should further contamination subsequently be discovered.
13. Benchmarks should be developed for the remediation of contaminated sites, which will vary depending upon the land usage and site location of a particular site. The use of such benchmarks will allow remediation plans or orders to be tailored on a site - specific basis. There should be full public input into the development of these benchmarks (CCME, Contaminated Site Liability Report).

Appendix II

Research Questions

1. What were the major issues around the redevelopment of the land?
2. Who were the major players involved?
3. What was your role?
4. What led up to the partnership approach?
5. How did you and the various stakeholders react to the proposed Bioreserve?
6. Why a Bioreserve? Were other options considered and subsequently ruled out?
7. When was Fort Whyte approached?
8. Why was Fort Whyte approached and how did they respond?
9. Why did Fort Whyte agree to participate?
10. How was the community involved? What function did the Transcona Community Bioreserve Residents Liaison Committee serve?
11. How has the Bioreserve effected/impacted the community?
12. How effective and practical was this approach? Was it successful? Why or Why not?
13. What have been the benefits?
14. What were/are the risks?
15. What barriers did you face along the way?
16. How supportive/receptive was the community of the process, proposal and end-use?
17. Who paid for the restoration and development of the Bioreserve? Was there sweat equity and involvement of the community and others?
18. How did the existing legislative/regulatory controls impede or benefit the partnership approach? What needs to be changed to allow for future successful partnerships to occur?

19. What are your thoughts about the current state of the initiative?
20. What would you have done differently?
21. What lessons were learned of this partnership approach?
22. Could you see future applications of this approach for others?
23. What would you recommend to other communities/stakeholders facing similar circumstances and challenges? What worked, what didn't?

Appendix III

November 2000

Dear _____:

I am a Natural Resources Management Masters student at the Natural Resources Institute, University of Manitoba currently conducting practicum research on Brownfield Redevelopment. In particular, I am conducting a case study of Fort Whyte Centre's redevelopment of the Transcona Domtar Inc. wood preservative treatment site.

The primary purpose of this research is to outline lessons of general application for brownfield redevelopment based on the Fort Whyte Centre/Domtar Inc. case study. In order to document the process that led up to the successful redevelopment, I would appreciate your time (approximately 30-45 minutes) to ask some questions around your role and participation that lead up to the redevelopment of this site. I have attached a series of questions that I would like to discuss with you. These questions focus on the process, the role of the community, the social, economic and environmental impacts, the hurdles that had to be overcome and finally the results/outcome.

Since you may have some concerns around the sensitive nature of the subject, I want to assure you that your response to any question is completely voluntary and will be kept confidential. If you chose not to answer a particular question you may do so without prejudice. If at any time you wish to terminate or withdraw from the interview you may do so without prejudice or consequence.

Once the interviews have all been completed you will receive a summarized transcript of your participation. At this time you will have the ability to adjust the content if necessary to ensure accuracy before it is incorporated into the research. As well you will receive a final copy of the practicum.

The study itself has been approved by the Joint Faculty Research Ethics Board of the University of Manitoba. If at anytime you have a concern regarding the procedures of the study, you may report those concerns to the Human Ethics Secretariat (474-7122).

I believe that the lessons to be learned from the Fort Whyte/Domtar experience will be very useful to other communities, corporations and non-governmental organizations as they work together to redevelop brownfield sites

across Canada. The challenge is to find the best mechanism to allow for the redevelopment to happen. Your experience with the Brownfields to Bioreserve project will be a valuable asset in developing this mechanism.

I welcome any comments or questions you may have and would appreciate your participation in this research. If you agree to participate, please sign below in the space provided and mail it back in the enclosed self-addressed envelope. I will be contacting you in the next few days to answer any concerns or questions you may have on your participation. I can also be reached at (204) 253-3707 or you can contact my faculty advisor Mr. Thomas Henley at (204) 474-6169.

Sincerely,

Paul Holden

I _____ hereby agree to participate in the case study of the redevelopment of the Domtar Inc. wood preservative treatment site.

Name

Date

Appendix IV

The following descriptions were designed to bring greater clarity to the categories that have been identified in the Matrix:

Environmental Issues

1. Long-term Site Management: This category included any comments that identified long-term management as essential in moving forward with an end-use for the site.
2. Greenspace is a sought after Commodity: This category was a reflection of those that commented on the limited amount of greenspace left in many communities and the appeal that such a site would have to residents and others looking to relocate to the community.
3. Educational value/Recreational value: A number of individuals pointed out the significant educational and recreational benefits associated with the site.
4. Regulatory Impediments: This category reflected the concern expressed over the length of the process from remediation to redevelopment.
5. Regulatory Incentives: This category focussed on the flexibility of the existing regulatory/legislative controls that allowed the partnership to move forward.
6. Limit Risk: This category included risk with respect to the engineered solution, the day to day management of the site, and the necessary monitoring of the remaining contaminants. It also included those that identified community expectations as a risk. Finally this category included the concerns expressed that the existing remediation work not be disturbed by the redevelopment of the site into the Bioreserve.

7. Negative Perception Removed: This category included any comments made by individuals around all that was wrong with the site versus what could be right with it if an acceptable/beneficial end-use was available.

Social/Health Issues

8. Benefit to entire Community: This category indicated where those interviewed identified the need for the end-use to benefit the majority of the community and not just a handful of people.
9. Provincial/Community Investment: This category identified two areas of investment (ie. time and money) highlighted in the success of the re-development.
10. Health: This related to peoples concerns around ensuring that the Bioreserve would not create any future health risks to the community.
11. Political Involvement: This category outlined the concerns that were expressed by those interviewed around the confrontational approach political representatives brought to the process often at the communities expense.
12. Perception of Partnership: This category highlighted the concerns expressed in particular by those involved with Fort Whyte around partnering with Domtar and the possible negative perception this could have on Fort Whyte's name and reputation. It also highlighted the support Fort Whyte received by the community and government in moving the redevelopment forward.
13. Community Consultation and Involvement: This included feedback received from the interviews around the importance of an open and transparent consultation process with the community to the success of the redevelopment.

Economic Issues

14. End-Use: This category identified the importance of and debate over the end-use of the site to the community including consensus by those interviewed that no future industrial development be allowed.
15. Affordable/Sustainable End-Use: This related to the strong support by those interviewed for a sustainable and affordable end-use that would ensure the long-term viability of the redevelopment.
16. Compensation: This category identified the fact that a number of those interviewed felt that the company should have to compensate the entire community through an acceptable end-use.
17. Zoning: Given that the land had already been zoned parkland/recreational, significant commercial or further residential development opportunities were not an option.
18. Future Liability: This category related to peoples concerns that Domtar remain liable for any future spread of the contamination as owner of the land. At the same time, it covered the concern that Fort Whyte had around signing a long-term lease ensuring future liability was not part of the lease.
19. Selling Feature for the Community: This category included comments received by those interviewed around the benefits of the Bioreserve and the attractiveness to prospective residents looking for a home in the area.

General Issues

20. Future Applications of this Approach: This category identified whether or not those interviewed saw future applications of this approach.
21. Spin-Offs for Stakeholders: This category included a broad range of issues identified by those interviewed including: expanding Fort Whyte's geographic reach; environmental enhancements to the community; and future consultative roles for Fort Whyte.

22. **Effective/Practical Approach to Redevelopment:** This category looked at the approach, its effectiveness, and the impacts on the community.

Appendix V

CHRONOLOGY OF EVENTS

September 1996 - The Fort Whyte Centre was approached by Domtar regarding management of the contaminated site in Transcona. The Fort Whyte Centre's Board of Trustees were not interested.

March 1997 - Domtar came back to again solicit the Centre's interest. Domtar's Vice President of Environment visited the Centre to further discuss the possibility of Fort Whyte Centre management of the site.

March 1997 - Fort Whyte Centre's CEO addressed the Domtar proposal at the Fort Whyte Centre's Board of Trustees meeting.

March 10th, 1997 - Fort Whyte Centre submitted Bioreserve proposal.

September, 1997 - Fort Whyte Centre's CEO tabled a Term Sheet to the Fort Whyte Centre's Board of Trustees for review and approval. This Sheet set out the details of the transaction by Fort Whyte and Domtar.

The Board recommended signing the Term Sheet to move the negotiations forward.

October 1997 - The Term Sheet was signed by both parties. Fort Whyte is scheduled to make a presentation of the Bioreserve concept to Transcona residents at a public meeting, October 27, 1997.

May 1998 - The Minister of Environment signed the work order authorizing work on the site.

The Fort Whyte Centre was responsible for developing an End Use Development Plan.

The Fort Whyte Centre's Board of Trustees recommends the Lease Agreement and Service Agreement be signed on behalf of the Centre.

December 1998 - The lease and service agreements for the Transcona Community Bioreserve are executed as of December 1st, 1998.

Appendix VI



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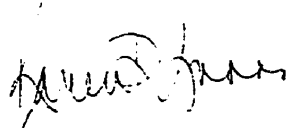
APPROVAL CERTIFICATE

06 November 2000

TO: Paul Holden
Principal Investigator

FROM: Karen Grant, Chair
Joint-Faculty Research Ethics Board (JFREB)

Re: Protocol #J2000:022
"A Case Study of Fort Whyte Centre's Redevelopment of the
Transcona Dometar Wood Preservative Treatment Site: Lessons for
NGO Involvement"



Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

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