Challenges in Attracting Sustainable Business to Hamilton

Peter Topalovic, B. Eng, M. Eng

McMaster University

September 17, 2008

Final Release

Submitted To:

Dr. Gail Krantzberg, Director – MEPP

Brian McHattie, Councilor – City of Hamilton

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Intended Audience:

This paper is intended to be used as a resource for members of Hamilton Municipal Council and staff involved in sustainability and emerging issues such as energy, transportation, air quality, water and waste water improvement, poverty reduction, tourism, community and development planning and economic development.

Purpose of the Study:

Depending on one's perspective, Hamilton can be viewed as a progressive and environmentally focused City, a manufacturing centre, a transit hub, a place to live, to grow, to work and to raise a family. On the other hand, it can be viewed as a poor investment, a dirty city suffering from a decline in manufacturing, and a city which maintains the status quo, lacking innovation. While elements of these perceptions hold some truth, in reality the City of Hamilton is a complex entity which cannot be analyzed using generalizations or stereotypes. With a population of 500 000 and a strategic location on Hamilton Harbour between major population centers of Toronto, Niagara, and Kitchener-Waterloo, the City is poised to draw on its vibrant history of successes and move forward with a positive and strategic outlook for the future.

This study aims to understand the challenges that the City of Hamilton faces in terms of its sustainable development, its ability to attract business and its ability to build upon a strong industrial and manufacturing base. This research is important because Hamilton is at a critical point in its progress on revitalizing its economy and ecosystem. Understanding the challenges will help City staff, councilors and citizens make decisions and adopt strategies that will encourage positive growth, financial success and a sustainable future. Many describe Hamilton as "the Hammer"; a city with grit and backbone. Citizens, staff and council should celebrate this reputation of hardworking stakeholders committed to the betterment of their community and having the will to ensure that success.

Study Structure:

The study is divided into three major sections which analyze the challenges to sustainable development and business attraction and provide policy recommendations.

Section 1: A Framework for Attracting Sustainable Companies: outlines a process to evaluate existing Hamilton companies and potential companies who wish to establish themselves as local employers. This evaluation will determine a company's sustainable fit and direct City staff to work with the company and ensure its positive effect on the community.

Section 2: Examining the Challenges to Attracting Sustainable Business to Hamilton: This section examines the central question regarding the City of Hamilton's future development: <u>What are the challenges in attracting sustainable business to Hamilton?</u> The investigation of this question resulted in three anticipated areas of study which include unforeseen challenges rooted in past civic decisions, physical aspects of the city and the state of world markets; external challenges including perceptions of the city such as reputation, economic factors, social issues and workforce issues; and political and

community challenges which deal with the need for a strong, clear vision, the need for aggressive action, and the resolution of philosophical differences among key political and community members.

Section 3: Meeting the Challenge: outlines case studies and policy recommendations that will enable Hamilton to address the challenges described in Section 2 and could be adopted by the city to ensure future success in attracting sustainable companies. Three broad categories summarize strategies for meeting the challenges faced by the City including leading by example; economic development and the business case; and integration, quality of life and new urbanism. Amongst the policy recommendations it was noted that green building, energy efficiency, climate change and alternative energy policies are important to attracting companies and remaining competitive with other municipalities.   The case studies reviewed indicated that smart growth, poverty reduction, quality of life indicators, economic vision, choosing the right companies for Hamilton and the pursuit of public-private partnerships are key to successfully implementing sustainable strategies for future growth and development.

Key Findings:

This study indicates a need for the integration and centralization of sustainability initiatives under an independent Office of Sustainability. Vision 2020, the cornerstone of this strategy, can unite the various departments of the City pursuing sustainability measures, if it incorporates the proper targets, indicators and stakeholder engagement strategies. The company evaluation process proposed as part of a Sustainable Corporate Initiatives Committee can be successfully implemented by a central coordinating body. Furthermore, the process to evaluate companies can also be used to evaluate the City of Hamilton's progress in achieving its sustainable mandate through Vision 2020, which has been identified as a key to attracting sustainable business to the City.

Hamilton: the Sustainable City is not only a possibility; it is a reality that will make Hamilton an economic, environmental and social success story. To accomplish this, all City stakeholders must unite in their efforts to contribute to the improvement of their community.

INTRODUCTION

Issues of sustainability are often complex and involve numerous stakeholders. Politicians, business leaders, consumers, and the mass media all have a role to play in the sustainability of life styles, technological systems, worldwide transactions, natural resource stocks and ecological systems. These issues of sustainability are further complicated by the terminology used to describe similar elements such as the triple bottom line, corporate social responsibility, natural capitalism, deep ecology and numerous other terms. Even the terms sustainability and sustainable development are not always clearly defined for most people. The term sustainable development was first defined in the Brundtland Report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland Commission, 1987).

The intent of this paper is to discuss issues of economic, social, ethical and environmental sustainability and the challenges and opportunities in attracting sustainable companies to the city of Hamilton. The first section of this document outlines the current initiatives that have been proposed, to attract companies to Hamilton. These initiatives will be described in the context of Hamilton's historical development and its current approach to future development. Section 2 will explore the barriers and challenges to triple bottom line initiatives in the city including the challenges to attracting sustainable business. It will summarize the support for and against sustainable initiatives and describe the associated challenges. This section will also analyze Hamilton's own policies and suggest ways that the city can lead by example. Another integral part of dealing with the challenges associated with sustainable development is policy development. The third section of this report suggests policies that can be used to encourage sustainability and help attract sustainable companies to the city of Hamilton. This will include a framework for city staff to follow in order to make local business leaders and politicians aware of the positive benefits of attracting sustainable business and development. The analysis will draw upon case studies of municipalities who have been successful in implementing sustainable initiatives and it will outline the challenges they have faced and how they were overcome. The intent of this section is to provide a model for the city to follow in order to meet the challenges of sustainable development.

SECTION 1: A FRAMEWORK FOR ATTRACTING SUSTAINABLE COMPANIES

The following is a summary of a policy proposal and background document that was developed for the city of Hamilton entitled *Attracting Sustainable Companies to Hamilton* (Topalovic, 2006) and will herein be referred to as the Policy Proposal. It outlines the initiatives that have been proposed to attract companies to Hamilton and it also provides background information to expand on the definition of sustainability and how it relates to Hamilton's development.

Policy Recommendations

The Policy Proposal addressed a system for Hamilton to determine the worth of a business, company or group in terms of economic, environmental, social, community or ethical indicators for the purpose of having that group operate in Hamilton. Three recommendations were proposed:

1. A committee should be established to research companies that subscribe to triple bottom line reporting philosophies or sustainable initiatives named the Sustainable Corporate Initiatives Committee. The Triple Bottom Line refers to the three necessary elements of sustainable development: economic performance, environmental protection and positive social outcomes.
2. A system to evaluate companies should be developed using indicators that will measure the economic, environmental, social and ethical impacts on the community.
3. A multi-stakeholder approach to developing partnerships between the city and sustainable companies should be implemented by approaching these companies and ensuring they are supported with the proper infrastructure, people, policies and incentives.

Sustainable Corporate Initiatives Committee

The committee's role would include researching companies who report on environmental and social indicators and undertake sustainable initiatives. Many different institutions have information on companies who are working towards sustainable goals such as the Dow Jones Sustainability Index. The utility of a company is a measure of how well the company meets the needs of the community in terms of economic, environmental, social and ethical measures. Once information has been compiled about the company a decision tool would be used to determine the utility of a company to the Hamilton community. Once a company is determined

to be in "good standing" (for which there will be criteria), it will be referred to a committee working group who will research the company's needs and create a partnership in a certain economic cluster that Hamilton wishes to develop.

Company Evaluation

The companies would be evaluated using the Analytic Hierarchy Process (AHP) which involves economic, social, ethical and environmental indicators. Each evaluation would compare the company against an existing model company in a particular economic cluster. AHP can be implemented using a software package or a spreadsheet and can aggregate many evaluations into one final comparison. The details of AHP and a list of indicators are contained in Appendix A and B.

Working Groups

The key to attracting triple bottom line companies to Hamilton is ensuring that they are made aware of partnership possibilities, infrastructure support and the skilled workforce that the city can provide them. Once the company has been evaluated a working group, consisting of experts within a particular cluster, business representatives, committee members, interested groups and citizens, will use a multi-stakeholder approach to ensure that the appropriate people, funding and infrastructure exist to support the company. They will also develop incentives for the company in order to attract them to the city.
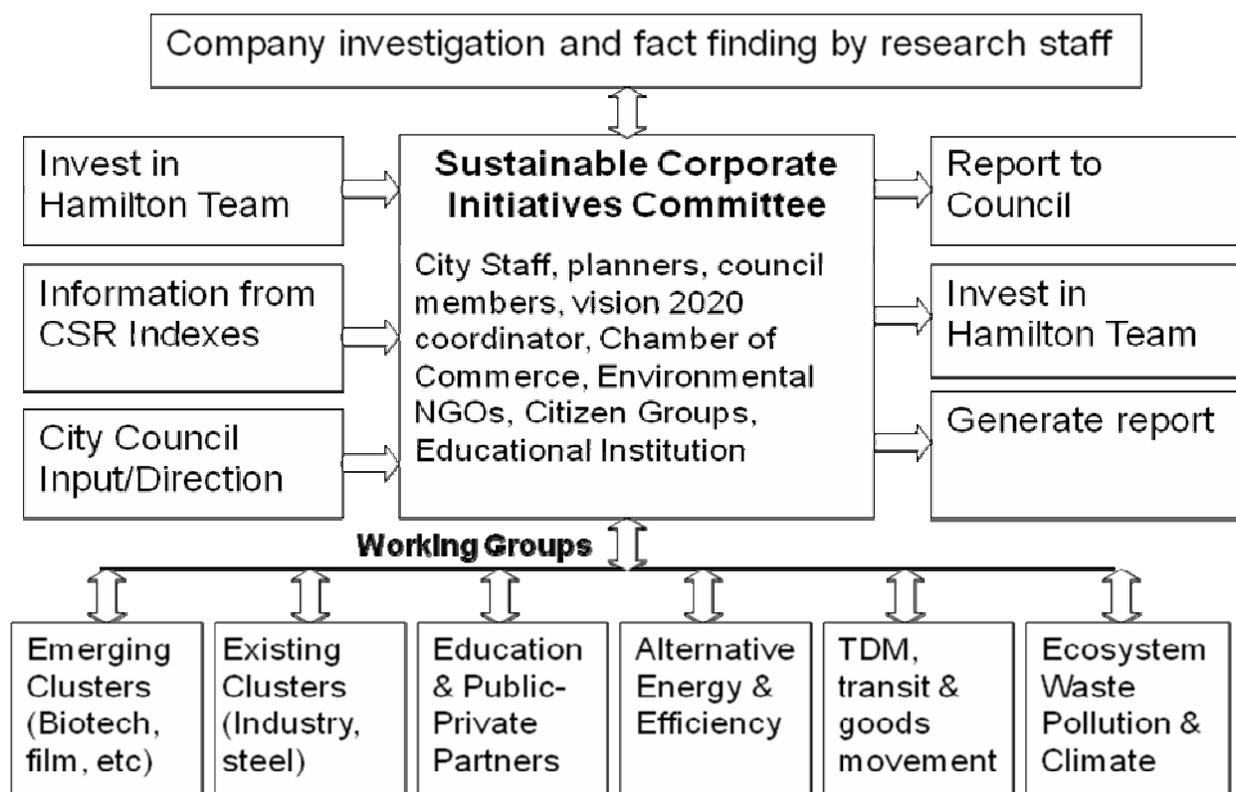
Background: Hamilton and the Triple Bottom Line

Hamilton: Historical Context and Current Initiatives

The city of Hamilton prospered as an electricity generating, textile manufacturing and steel producing city over its history. The late 1940's saw the peak of the manufacturing sector due to prosperity after the war (*Hamilton Economic Development, 2005a*), but by the 1970s Hamilton experienced a deterioration of the downtown core due to urban sprawl and a manufacturing industry threatened by free trade. The economic development policies of this era could not prevent the deterioration or sprawl (Freeman, 2001). The recession of the 1990s and Canada's participation in the North American Free Trade Agreement (NAFTA) further contributed to the city's decline. Hamilton based companies had difficulty competing with cheaper imports and at the same time, these companies, who established large scale operations in the city over the years, were downsizing their operations into more specialized mini-mills. By 2000, Hamilton lost a significant portion of its manufacturing base, establishing the health care and service industries as the largest employers in the city. The loss of jobs and industry caused economic and social problems in the city to increase and has left Hamilton with a net export of commuters (Freeman, 2001).

Today Hamilton is working to fill the gap left by vacant factories and is acting to redefine its image. Partnerships with McMaster University to redevelop the old Camco manufacturing site, condominium building projects in the downtown core, and a re-branding of the city as the "Education City" are amongst the initiatives being undertaken to create a fresh new approach to marketing the city.

Vision 2020

Vision 2020 is an integral part of the rebuilding process. It was developed in 1992 as a set of guidelines and indicators to help create a sustainable city. The vision is meant to guide all development in the city to ensure that social, health, economic and environmental considerations are taken into account when making decisions. A review of the indicators over the years that the system has been in place shows that while some improvements have been made, overall the city has performed sub-optimally in meeting Vision 2020 goals (*City of Hamilton,* 2004). The program has also suffered some set backs such as the resignation of the Vision 2020 co-ordinator and its lack of use in city decision making processes (B. McHattie, personal communication, Oct. 18, 2006). However, a manager of sustainability has recently been hired to replace the coordinator.

Although measuring performance is an important part of Vision 2020, an equally important facet of the system is its ability to raise awareness of the achievements and problems facing the City, which helps the City set goals and targets for the future (Arnold, 2005). Vision 2020 has also become an integral part of Building a Strong Foundation (BASF), which aims to integrate the vision's principles into the Official Plan and the Growth Related Integrated Development Strategy (GRIDS) which identifies future growth areas for the city and balances growth demands with quality of life indicators using nine guiding principles. Vision 2020 is also an integral part of the transportation, stormwater and water/wastewater master plans (Building a Strong Foundation, 2004).

Economic Development

The economic development policy for Hamilton follows the cluster theory of development, which takes into account the competing interests of certain geographically related companies, service providers, and institutions. The strategy builds on the strengths of existing industries, which can be logically grouped and supported based on similar attributes. "Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate." (Porter, 2000, p. 15). Traditional clusters in Hamilton are the manufacturing and steel clusters. Emerging clusters identified by the city are biotechnology, biomedical, film and cultural, downtown core renewal, and the airport lands (*Hamilton Economic Development ,* 2005).

Attracting new business is a competitive process, especially in the Greater Toronto Area. By building on existing strengths as opposed to attracting new industries, Hamilton does not have to directly compete in all sectors; instead, the city has committed to supporting its existing and emerging clusters in order to retain industry in the city and strengthen their performance. At the same time the development policy does not exclude new industries from being established. If there are possibilities for new industries, an effort to establish a nucleus of companies for that emerging cluster can be undertaken and developed (*Hamilton Economic Development ,* 2005).

One example of a new cluster possibility is the alternative energy sector. Currently companies such as Clean Field Energy, who develop wind power solutions, have moved their operations to Hamilton. The city also established the Hamilton Community Energy subsidiary, which has undertaken a variety of initiatives, including co-generation projects. These initiatives could help establish Hamilton as an alternative energy provider (*Hamilton Community Energy,* 2004; *Clean Field Energy,* 2005). The partnerships that are formed between new businesses

and the city should be established and supported within Hamilton's clusters of innovation (N. Everson, personal communication, February 21, 2007).

Brownfield Development

Hamilton's Environmental Remediation and Site Enhancement (ERASE) community improvement plan has been established by the economic development office to help remediate brownfields. A brownfield is an "abandoned, idled or underutilized industrial or commercial property where expansion or redevelopment is complicated by real or perceived environmental contamination, building deterioration/obsolescence, and/or inadequate infrastructure" (*Environmental Remediation and Site Enhancement,* 2005). Brownfield remediation is an important facet of attracting sustainable companies. Re-developing these land parcels is more environmentally friendly than using greenfields (virgin, unused employment lands), and attracts companies who perform the remediation. The ERASE plan also provides incentives for developers who participate in the remediation and use of the land. Effectively utilized land in the inner city is an important goal of Vision 2020 and helps improve the economic and social value of abandoned land making the city more attractive to businesses (*City of Hamilton,* 2005). Redeveloping brownfields can help to revitalize a community, make more effective use of existing infrastructure, create jobs and avoid greenfield development.

According to the economic development office, Hamilton has roughly 360 acres of brownfields, mostly located within the boundaries of the former city of Hamilton. If these land parcels were placed side by side they would occupy an area six times the size of Limeridge mall located at Upper Wentworth Avenue. The Ontario government has been working on ways to help turn a potential liability into a valuable asset. In 2004, the Brownfields Statute Law Amendment Act was put into practice. The legislation aims to create incentives for brownfield development by addressing past issues relating to regulatory liability, financing and planning. These categories of issues each have a set of tools created to solve the problems associated with them.

Examples of financial tools are municipal loans, grants and the waiver of municipal fees for land development. The liability toolset complements the financial tools with environmental liability insurance, liability agreements that limit the risks of liability, and a technology database that provides details on remediation technologies and processes. Process tools aid in the land-use planning and environmental investigation and clean-up processes. With this toolset the developer risks will decrease, the feasibility of remediation projects will increase and more incentives will exist to make brownfields profitable (*MAH,* 2007). The ERASE program takes the first pioneering steps to achieve this goal; however, the city will have to develop a strategy to

convince developers wishing to build on green space to consider a brownfield as a feasible alternative.

Challenges and Motivation for Change

According to some city councillors, staff and concerned citizens, meeting Vision 2020 goals are important for Hamilton and its sustainable future. In recent years excitement around Vision 2020 has taken a back seat to other economic interests (Arnold, 2005). Some groups have spoken out against the city's planning decisions, especially concerning the Red Hill Creek Expressway (McClean, 2005). Other controversies have surrounded the Maple Leaf Foods proposal to develop the Glanbrook Industrial Park and the development of airport lands, termed Aerotropolis. The Maple Leaf issue involved the negative environmental aspects of pork processing and the company's track record of poor environmental progress. On the issue of whether or not to allow development of the land, council was divided. This division and uncertainty eventually caused the company to withdraw from the process (Van Harten, 2005). As discussed by Topalovic (2006), in the Maple Leaf situation, the city lacked a mechanism to evaluate the proposal using objective measures that described the context of the development, the needs of the community and the goals of the city. This controversy became the motivating factor for establishing the proposed Triple Bottom Line Committee and utilizing the Company Evaluation Tool which was outlined in the Policy Proposal (Topalovic, 2006) and in Appendix A and B.

Relevant Sustainability Policy Initiatives in the City

Corporate Energy Policy (PW070127)

The Corporate Energy Policy's city wide energy reduction targets aim to reduce energy use in the City by 20% in 2020. This will help the City of Hamilton eliminate dependence on oil. Worldwide oil reserves have decreased to the point where much of the easily extracted oil is no longer available. As reserves continue to be used at unsustainably high rates, the price to extract the crude will increase, while access to the crude source will become more difficult and unaffordable. In the coming years, this situation will worsen, as the world oil supply has already reached its peak and is now in a state of decline and diminishing returns (Zittel, 2007). This crisis could drive the City's energy budget to unsustainable levels and jeopardize the City's ability to provide services, programs and infrastructure maintenance. The energy policy demonstrates to the public that the City is serious about energy reduction and it could be a catalyst for attracting sustainable companies to the City.

Corporate Air Quality and Climate Change Strategic Plan (PED06336a)

This plan aims to improve air quality and assist the City in mitigating and adapting to climate change by reducing green house gas emissions by 20% of 2005 levels by 2020. The recommendations in Phase II of the plan seek immediate action on development projects currently underway to mitigate the effects of climate change. The report refers to transportation, the greening of the built environment and adaptive planning to achieve these goals. The effects of climate change that will directly impact Hamilton, the surrounding eco-system and financial prosperity of the City include:

- Preferred conditions for exotic invasive species from other places in the world which can cause great damage to ecosystems and millions of dollars in clean-up costs and loss of industry. Invasive species cost governments 200 million dollars annually from the negative effects on commercial, recreational and industrial uses of the ecosystem. Hamilton area residents, businesses and industry bear a significant portion of these costs (Lodge & Finnoff, 2008);
- Increases in weeds and pollen, resulting in an increased allergy attacks in individuals;
- Higher temperatures which contribute to greater heat stress for citizens at risk;
- Decreasing average water levels in the Great Lakes resulting in impacts on water supply and quality;
- Changes in precipitation and temperature that will affect water levels in waterways and wetlands, affecting flood protection, water cleansing, habit provision and recreational uses;
- Changes in temperatures resulting in increased maintenance costs for transportation including variable freeze-thaw cycles and pavement buckling;
- Vulnerability of infrastructure to extreme weather events, including droughts, unpredictable precipitation, extreme heat and cold, high winds, and severe storms for which they are currently unprepared;
- Increased demand for building cooling resulting in increased use of air conditioning and higher energy consumption, greenhouse gas emissions and air pollution.

Adherence to the AQ & CC plan will decrease the City's vulnerability in the face of climate change and allow it to be a profitable and desirable place to live. The benefits in attracting and retaining employees and businesses could be numerous.

Transportation Master Plan and Rapid Transit

The Transportation Master Plan recommends that a variety of sustainable measures be implemented to reduce congestion, air pollution and dependence on automobiles. The most notable of these recommendations are rapid transit initiatives and transportation demand management strategies. Metrolinx, the provincial transportation improvement organization in Ontario, is working closely with the City to install rapid transit routes in main transportation corridors. Rapid transit could be implemented using rapid busses or light rail transit, both of which will run in exclusive lanes alongside other vehicles and travel with transit priority street

signals. Transportation Demand Management strategies complement transit improvements by promoting and designing bike and pedestrian friendly streetscapes as well as higher density, mixed use land developments.

Implementing a rapid transit system can help achieve the goals set forth by transportation demand management policies, including reduction of car travel trips and increased transit ridership. There is a direct correlation between urban sprawl and increased negative health consequences for those living further from the urban centre and those who are dependent on car travel. Rapid transit promotes intensification and pedestrian friendly streetscape design therefore curbing sprawl. It also plays an important part in decreasing health care costs related to health issues caused by poor proximity to transit and reliance on the automobile. Efficient transit systems are viewed by many to be catalyst for social change while improving the health, environment and connectivity of the community. As a tool for increasing the civic sustainability, transportation initiatives can help attract residents and business to Hamilton. Studies have proven that these integrated policies result in millions and sometimes billions of dollars in new developments and increased land values (Cervero & Duncan, 2002).

Stormwater Master Plan

The Stormwater Master Plan contains storm water system policies and strategies which will be used in bylaw review, operation of the existing storm water system and future system enhancement. It also outlines various source control measures to promote ground infiltration including rain barrels, rain gardens, pervious driveways, biofilters, soakway pits and green roofs. These strategies aim to route water away from the stormwater system and use it for more sustainable purposes. Stormwater can be stored and used to water gardens or absorbed by surrounding plant and animal life to enhance the natural ecosystem. A large body of research indicates that these initiatives, including green roof projects, reduce stormwater management costs, reduce energy costs, improve the urban aesthetics, extend the life of stormwater management ponds and encourage academic study of innovative solutions. Furthermore, these techniques protect the Great Lakes ecosystem which has an important financial, commercial, environmental and social role in civic life. These improvements to the urban ecosystem and landscape can have a profound effect on residents and businesses alike (Banting, 2008).

Sustainability and the Triple Bottom Line

The concepts of sustainability, Triple Bottom Line, Corporate Social Responsibility and Natural Capitalism are interrelated, each with a slightly different focus. Sustainable

development was defined at the beginning of this paper as it was first described in the Brundtland Report. However, it is not limited to one definition or interpretation. The Canadian Department of Environment Website builds on the accepted definition of meeting the needs of the present without sacrificing the needs of the future with the addendum that, "development must be based on the efficient and environmentally responsible use of all of society's scarce resources - natural, human, and economic." (*Environment Canada,* 2004). The terms triple bottom line, corporate social responsibility and natural capitalism clarify the ambiguities with the concept of sustainability and provide a more detailed framework which can be used by governments, businesses and citizens to create a more sustainable world.

Triple Bottom Line (TBL)

The Triple Bottom Line refers to the three necessary elements of sustainable development: economic performance, environmental protection and positive social outcomes. It encourages corporations to not only report on their economic successes and failures, but also on their environmental and social successes and failures. "The TBL agenda focuses corporations not just on the economic value that they add, but also on the environmental and social value they add – or destroy." (Elkington, 2004). Over the last 50 years, environmental disasters, unfair wages, unequal treatment of minority workers, the rise of non-governmental organizations, a weakening ozone layer, the energy crisis, terrorism and climate change have provided indication that the world is being managed in unsustainable ways (Hay, 2005).

Elkington's main argument is that by pursuing triple bottom line goals, the company's focus on environmental and social performance will result in a cost savings and increased competitiveness. A company that utilizes more efficient technologies in their manufacturing processes than their competitors will use less energy and raw materials. This benefits the environment by reducing the amount of pollution generated and at the same time, the company will become more competitive because it can produce its product at a lower cost. This is referred to as the business case for sustainability and has been demonstrated to be true in a variety of case studies across many industries in various regions of the globe (Dudok van Heel, 2001; Hawken et al., 1999; Spiller, 2000).

According to the Policy Proposal (Topalovic, 2006), the triple bottom line concept also deals with meeting the needs of relevant stakeholders; those who have an interest in a company and those who are affected by a company's interests. These include suppliers, shareholders, employees, the community in which the company operates in and the surrounding environment (Spiller, 2000). Socially Responsible Investments are financial investments that take a multi-stakeholder approach to investing in companies that perform well on all three bottom lines. A

municipality can become a socially responsible investor by approaching companies that have utility to their community in these pillars of sustainability.

Corporate Social Responsibility (CSR)

Corporate social responsibility is similar to TBL, but more specifically deals with implementation strategies that a company can employ to become more sustainable. It adds an ethical component to the triple bottom line and covers issues such as environmental corporate policy, health and safety, human rights issues, community interconnectedness and corporate ethics. According to the Industry Canada website it can be, "understood to be the way a company achieves a balance of economic, environmental and social imperatives while at the same time addressing shareholder and stakeholder expectations … CSR is generally seen as the business contribution to sustainable development." (*Corporate Social Responsibility,* 2005). In general, the two concepts of CSR and TBL clarify the term sustainability and provide a framework for achieving the goals of sustainable development.

Deep Triple Bottom Line

In the past, some companies have used non-standard reporting indicators which allowed them to only report on the triple bottom line measures that they performed well on and to ignore the rest. "The problem with this is that without comparability and consistency standards, the current reports are more 'greenwash' than a factual representation of the company's actual position" (Tschopp, 2005). A researcher or socially responsible investor must be aware of the problems that can arise with the use of TBL terminology as a distraction from a poor environmental record or poor social performance. As an example, "even Enron had an exhaustive code of ethics and principles." (Norman & MacDonald, 2004). By taking a Deep TBL perspective, a term borrowed from the definitions of Deep and Shallow Ecology (Hay, 2005), a company, consumer or investor takes into account the context in which social, ethical and environmental decisions are made.

To determine if a company employs a deep TBL strategy one could examine their political motivations, lobbying efforts, past environmental record, and whether or not they have a comprehensive corporate social responsibility plan which incorporates sustainable reporting measures such as the Global Reporting Initiative (GRI) sustainability indicators. Examples of companies who employ deep TBL strategies are the Interface Corporation in the textile industry and Arcelor-Mittal Dofaso in Hamilton, a steel solutions company. These companies support their product from the raw materials required during product manufacture to the recycling of the product when it is discarded. They have also implemented worker benefits and health

programs, and they have become integral parts of the communities in which they operate (Topalovic, 2006).

A related concept is weak and strong sustainability, the terms used to describe the two different approaches to sustainable development. The weak is associated with isolated eco-efficiency and incremental measures with an emphasis on technological solutions. This includes investing in technologies to offset the impact of non-renewable resource use, such as carbon sequestration. Strong sustainability takes a more radical approach advocating a whole systems design. It encourages using renewable resources so that their ability to be replenished is not diminished, rates of pollution that do not exceed the carrying capacity of the ecosystem and the elimination of irreversible effects on the ecosystem (Milne, Kearins, & Walton, 2006). Natural Capitalism is based on the idea of strong sustainability.

Natural Capitalism

Natural Capitalism builds on CSR and TBL concepts while providing an integrated framework. It suggests that there are four necessary actions that must take place to achieve a sustainable economy. The first is centered on resource use and eco-efficiency. Lessening our dependence on resource use and making our manufacturing processes more efficient will increase corporate profits and help achieve the environmental goals of TBL. The second component is biomimicry, which is a scientific study that analyses nature and its systems to imitate them and solve human problems. In a manufacturing context, products and processes should attempt to emulate natural processes, ensuring that all waste is recycled and no toxic chemicals are required, as is done in nature. The third concept of a service and flow economy relates to product stewardship and the support of the product from when it is designed to when it is discarded by the customer. This relates to McDonough and Braungart's (2003) concept of cradle-to-cradle design, in which processes aim to eliminate waste and harm to stakeholders. It can be achieved through the use of inherently safer technologies and closed-loop technical nutrient cycles where the waste of one process becomes the input to another, known as "waste equals food". Finally the fourth component, re-investing in natural capital is based on the concept of a restorative economy which ensures that resource stocks will be replenished, ecosystems will remain functional, communities will be improved and restoring nature will be seen as an economic, environmental and social benefit (Hawken et al., 1999).

The strategies of sustainable development, triple bottom line reporting, corporate social responsibility and natural capitalism set out a framework and form the basis of policies that can aid companies in becoming stewards of the community, while recognizing the needs of all stakeholders. Adherence to these strategies could avert problems with climate change,

pollution, environmental degradation, poor corporate ethics, and social issues. At the same time, they can help usher in a new free market system where the companies who embrace sustainable strategies will be the most profitable and successful (Hawken et al., 1999). It follows that municipalities who embrace these philosophies can work to attract these pioneering companies and enjoy more prosperity for their citizens.

Evaluating Companies Using TBL Concepts

The goal of the research on attracting sustainable companies is to provide a starting point to develop a framework for selection, evaluation, attraction and retention of sustainable companies. Section 1 has provided the reader with all the building blocks, terminology and policy suggestions that are necessary to accomplish this task. The set of indicators listed in Appendix B, are meant to identify companies who operate using deep TBL principles and natural capitalism. The measures were adapted from the GRI indicators, Hamilton's Vision 2020 goals, the Dow Jones Sustainability Index and various others. The four categories of indicators are Economic Measures, Environmental Measures, Social and Community Dimensions and Business Philosophy. Economic Measures include the revenue potential of the company, the number of jobs created and the fit of the company into existing clusters. The relevant Environmental Measures include the amount of pollution produced, the effect of a company's processes on the ecosystem, waste and water issues, green house gas emissions, and the effectiveness of the company's environmental standards and policies. An often overlooked third category termed Social and Community dimensions includes the company's level of commitment and involvement in the community as well as the treatment of employees, the health of the community, and the partnerships the company undertakes to achieve these goals. The final category of Business Philosophy deals with ethical aspects of the company, transparency and accountability, and the company's triple bottom line commitment.

SECTION 2: CHALLENGES IN ATTRACTING SUSTAINABLE BUSINESS TO HAMILTON

Examination of the Challenges

Central Question

The examination of the historical context and current initiatives of the City of Hamilton reveals a great deal of potential for sustainable development and economic growth. In order to foster positive growth, it is important to understand the challenges to attracting sustainable development and explore methods to meet the challenges. This inquiry poses the question:

[**What are the Challenges in Attracting Sustainable Business to Hamilton?**]

Anticipated Findings

The challenges to attracting sustainable companies can be grouped into four broad categories: unforeseen, external, political and community challenges. The unforeseen challenges deal with impediments that are rooted in past civic decisions, physical aspects of the city and the state of world markets. These challenges are currently beyond the immediate control of the city's bureaucratic and political leaders. The next set of challenges are external ones which include perceptions of the city, such as reputation, economic factors, social issues and workforce issues. These limitations could be alleviated by enacting the proper policies and implementing relevant solutions detailed further below. The political and community challenges are also potentially avoidable but deal with cognitive and behavioral issues. These barriers may also be the hardest to overcome as they deal with the need for a strong, clear vision, the need for aggressive action, and the resolution of philosophical differences among key political and community members.

Anticipated Finding 1: Unforeseen Challenges

This set of challenges is a collection of issues that are currently beyond the city's ability to circumvent. Included are issues of poor industrial and commercial planning in the 1980's, high taxes, lack of shovel ready and serviced land, country wide manufacturing decline, increased

social problems and an unsightly industrial sector. It is important to note that although many of these issues are products of past decisions and policies, they can be circumvented in the future.

Lack of Long Term Planning in the 1970's to late 1980's

According to Neil Everson, around 25 years ago Hamilton required a long term planning vision for industrial and commercial land zoning. Zoning plans of the past have relied on the fact that the steel industry was a booming enterprise, employing many citizens. During this period of good manufacturing performance, there was little thought given to what would happen if the manufacturing and steel industries declined (personal communication, Feb. 21, 2007). The recession of the 1990's, North American free trade and the restructuring of large corporations caused a manufacturing decline and greater problems for the nation's cities, especially Hamilton. "By 1993, unemployment, poverty, boarded-up buildings, decaying sewer pipes, roads, bridges and water-distribution systems along with insufficient revenues to correct what needed fixing or funding triggered the first alarm bells" (Danyluk, 2003). The long term vision Hamilton required to address the problems of the nineties did not exist. This caused a few major issues for the city. One major issue surrounds access to highways. Many areas surrounding highway 403 and the Lincoln Alexander parkway were zoned residential. These prime lands could have been used to attract more light industrial and commercial developments. In addition, these lands could have been serviced by rapid busses and light rail transit developments to facilitate people and goods movement and provide an alternative to car travel (City of Hamilton, 2008). If this were possible, the city could have begun to shift its tax base back to optimal levels and would provide more access to shovel ready and serviceable land via rail, transit and road (N. Everson, personal communication, Feb. 21, 2007).

Tax Base Shift and Higher Taxes

Hamilton's tax base in the late 1970s and early 1980's was 65% industrial and commercial and 45% residential. This was an optimal condition, since corporate lands do not need to be serviced by parks, recreational facilities, schools and social institutions. After the recession of the nineties and a manufacturing industry decline, the current tax base is 25% industrial and commercial and 75% residential (Eisenberger, 2006). This means that the municipality has to charge higher taxes because a majority of the tax base requires a great deal of services. This tax base shift is a good indication that Hamilton has become more of a bedroom community than a place for citizens to work. The social services provided in the city are some of the best in the region, which has great benefit to the citizens, but at the same time the high taxes provide a disincentive for businesses since they "seek to locate in a place which can provide an optimal balance of high municipal service benefits and low taxation levels." (Dekel, 1997).

Recent data for Hamilton shows that as the tax rate has decreased in a five year period, the amount of development has increased.   This indicates that there is at least some relationship between lower tax rates and increased business attraction in Hamilton; however, there are other factors that influence business attraction. Appendix D contains tax data and building permit activity for 2000 – 2006, showing the trend. This could become an avoidable barrier in the near future if there is more business investment in Hamilton and the city reverses its bedroom community status.

As noted in the Policy Background Paper (Topalovic, 2006), Hamilton's population demographics also set it apart from its neighbors. The city's aging population and its vulnerability to plant closings and economic downturns have put a burden on the city's social services. Hamilton spends a larger percentage of its budget on social assistance, housing and health than most other municipalities. This problem has led to Hamilton having one of the highest tax rates in the province, which lessens the city's ability to be competitive with other regions that do not have as many social problems or a high reliance on the manufacturing sector, "spending pressures in Hamilton have led to high taxes, which diminish the city's economic competitiveness. This has an influence on business retention and relocation, which impacts property tax revenues, resulting in less money to fund local priorities such as social services." (*Centre for Community Study [CSD], 2006b*).

 Although the Ontario Municipal Partnership Fund was suppose to eliminate the burden of social funding from municipalities, Hamilton must still subsidize social programs from the property tax base. These phenomena could explain the decisions made by companies, once considered vital to Hamilton's image and success, to move their operations to other municipalities where taxes are lower and space is readily available at cheaper rates. Some believe high property taxes were in part to blame for companies such as Tim Horton's moving out of Hamilton and setting up manufacturing elsewhere. Unfortunately, with high welfare rates and plant closings, the city has found it difficult to lower taxes (Van Harten, 2006).

Lack of Shovel Ready and Serviced Land

According to Neil Everson (personal communication, Feb. 21, 2007), 90% of industrial and commercial development inquiries from businesses are for shovel ready, serviced green space. Most companies are not interested in using brownfields for a variety of reasons. Most of these spaces are located in the inner city, which does not provide ideal highway or transit access currently. Brownfields that were previously contaminated or are located near heavy industry are not acceptable for environmentally sensitive operations such as food and beverage processing or biomedical applications. The city originally worked with Maple Leaf Foods to remediate a

brownfield site under the ERASE plan, but no site was environmentally acceptable. Many of the 7 – 10 land development inquiries the economic development office receives per day are for greenfields and many of these inquiries get turned away since no site matches the requirements (N. Everson, personal communication, Feb. 21, 2007). Brian Wilson, former president of the Hamilton Chamber of Commerce agrees with the economic development office's position, "In the past [Hamilton] didn't grow because it didn't have developable land in good locations" (Arnold, 2005b). The city recognizes this and has developed plans for the Glanbrook industrial park, the lands surrounding the airport and brownfield remediation. Improving transit operations will also play a part in these plans, as evidence shows that rapid transit can encourage brownfield development, increase land values and attract businesses (Cervero & Duncan, 2002).

Anticipated Finding 2: External Challenges

This set of challenges has the potential to be overcome through municipal initiatives, citizen participation and marketing. A major issue in this category is perceptions of the city from outsiders such as investors and citizens from neighboring cities. These include degradation of the downtown core, an unsightly industrial sector and harbour, and the perception of increased red tape and regulations in Hamilton for land developers and businesses. Many of these perceptions are not based on real world data and some of the claims made have no evidence to justify them. Other avoidable external impediments are competition from neighboring municipalities, a lack of economic development spending and a brain drain of young professionals from the city.

Unsightly Industrial Sector and Harbour front

Hamilton's East End Industrial Sector is home to two major steel companies, US Steel Canada – Hamilton Works (formerly Stelco) and Arcelor-Mittal Dofasco, and various supporting industries such as steel mini-mills, parts manufacturers and technical service providers. In this same area there are other manufacturing operations which contribute to the industrial skyline; however, the various blast furnaces which are the heart of the steel making process, dominate this area. These furnaces are the major contributors to the smoke and flame that those driving on the Skyway Bridge see as they come into Hamilton. Although many of the industries along this skyline, including Arcelor-Mittal Dofasco, have worked to minimize their impact, modernize their operations and contribute to their community (*Arcelor-Mittal Dofasco,* 2003), potential investors driving along the bridge see a cloud of smoke and flame and aging facilities. This

industrial haven may appeal to some industrialists; however, companies who are working towards sustainable goals may not feel the same way.

Attracting sustainable business can be intertwined with this perception of dirty industry. Research conducted by Paul Gottlieb (1995) provides evidence that firms are attracted to high levels of certain amenities. They use amenities data to select their business location and ensure a healthy environment for their employees. The evidence shows that firms are attracted to locations with green space, public transit, airports, low traffic rates, low crime rates, low levels of pollution and landfill waste, proximity to parks, beaches and amusement areas, a good education system and quality public services. Crime rates have a large impact on building location, while pollution levels impact the perception of community health and well being (Gottlieb, 1995).

In the future it will be important to dispel the notions of environmental disregard and highlight all the benefits that the industrial core is receiving in terms of land and water remediation. This can be turned around to become a way to attract companies who wish to add to the clean-up efforts. Initiatives undertaken by the Hamilton Tourism Office and the Hamilton Port Authority have cleaned up many areas of the harbour, turning brownfields into parks and tourist attractions. This type of remediation will increase the perceived qualities of amenities which could attract both potential employees and employers alike. The HMCS Haida, the Canadian Marine Discovery Centre and Pier 4 park are prime examples of the clean-up and revenue generating projects that are on-going in the city (*Hamilton Economic Development, 2005b*).

Research conducted by Krantzberg and de Boer (2006) on the BENSIM model, which is a dynamic simulation benefits assessment model applied to Hamilton harbour remediation, shows that a remediated harbour front could increase profits and development in the industrial core and port lands. The property tax and land development tax collected on new developments could result in profits of up to $60 million dollars for the municipality. The harbour remediation could also benefit local businesses with increased sales from projects and spin-off industries. Restoration of the waterfront would give residents more access to boating, swimming and fishing which has a value of $496 Million for the community. Although this financial data is impressive, the biggest effect the remediation may have is on perceptions from outsiders and developers (Krantzberg & de Boer, 2006). The data provided by the BENSIM model and that of the research conducted by Gottlieb clearly indicate that economic development can be positively affected by remediation the industrial core. The West Harbour Waterfront Recreation Master Plan, which aims to enhance access to the waterfront, is indication that the City is addressing

these issues (Readman, 2007). In addition, the provincial government announced $30 million in funding for the remediation of Randal Reef, a highly toxic area of the Harbour (Fragomeni, 2007).

Perceptions of a troubled downtown core

According to a special Hamilton Spectator report in 2001, poverty in Hamilton's downtown core was the worst in Canada, drugs and drug related crime were very high, property values were low, there were many vacant and derelict buildings and property taxes were high (Vallance-Jones). While some of these elements still exist in the core today, the city has since created a downtown renewal division of the economic development office, created incentive programs, worked to lower tax rates and encouraged the building of various residential projects in order to create a downtown that is 60% residential and 30% commercial (Hamilton Economic Development, 2005b). Furthermore, crime rate data shows that crime rates in the city are comparable to those of other Canadian cities of similar size and significantly lower than crime rates in cities such as London, Windsor and Toronto. The amount of spending on police services in Hamilton is comparable to spending by other municipalities (Reitano, 2006). This data supports the claim that renewal efforts are beginning to help improve the downtown core and make it a more lucrative place to invest in.

Despite these improvements many groups are still wary of the downtown core and site it as one of the reasons they chose not to set up operations in Hamilton. Evidence of this trend can be found in a recent Statistics Canada survey indicating that the average local job was 5 percent farther away from city hall in 2001 than it was in 1996 (Faulkner, 2005). Many of the reasons for not investing in the city are based on false perceptions of the area, rather than real data on renewal efforts, such as those cited in the Invest in Hamilton Economic Review (2005).

Research conducted by Gottlieb (1995) on the industrial core, also applies to the downtown area. High crime rates are considered one of the major dis-amenities firms cite as reasons they do not develop in an area (Gottlieb, 1995). Many investors fear that high tax rates will make it difficult to turn a profit and are also worried about crime rates and the general disrepair of many surrounding buildings. These perceptions, as with those of the harbour front, lead businesses, especially those wishing to pursue sustainable goals, to look elsewhere. Many times these potential investors have not actually visited the city. Those investors that do visit leave with a more positive outlook on the city and its potential for development (N. Everson, personal communication, Feb. 21, 2007).

In the past two years, the situation in the core has been changing to become more positive and hopeful. The Sky Dragon Community Development Co-operative is a good example of a

new downtown core tenant working towards sustainable development and social change. Their renovated building contains meeting space and a café to further the goals of environmental and social awareness in the new millennium (*Skydragon Centre,* 2006). Hopefully groups such as Skydragon will encourage other triple bottom line companies to consider Hamilton for their operations.

Perception of increased red tape, complicated zoning and licensing issues

According to the economic development office, companies who consider Hamilton as a possible location for establishing a business are treated equally when undergoing licensing and zoning processes (N. Everson, personal communication, Feb. 21, 2007). However, where re-development is concerned, environmental assessments and rezoning requests can be lengthy processes in Hamilton and in other cities with an extensive amount of brownfield sites. There are also liability issues involved with environmental assessments and community issues involved when citizens perceive the development as having negative impacts. Companies seeking to redevelop land may also incur costs for environmental cleanup operations and land remediation (About Remediation, 2007). One reason for negative perceptions of Hamilton as an investment opportunity is the city's large number of brownfield sites compared to other municipalities. In addition, many developers are not aware of the new laws regarding brownfield re-development that reduce liability and provide financial incentives to undertake clean-up and building projects (MAH, 2007).

One example of red tape perceptions is the community reaction to a development proposal by Maple Leaf Foods to develop the Glanbrook industrial park which caused controversy in 2005. Many in the city felt the company's withdrawal was good for Hamilton's sustainable goals, while others felt it set a bad precedent and created a perception that Hamilton is not welcoming to businesses. According to Neil Everson, Director of Economic Development for the city of Hamilton (personal communication, Feb. 21, 2007), many less controversial companies have cited concerns that their proposals might face council or community disapproval, increased red tape and zoning regulations. According to the economic development office, the Maple Leaf foods example is in the minority of claims that are subjected to rigorous red tape. Many more developments in the city proceed quickly and without public backlash because those companies are better suited to the city.

Most of the problems that do exist with the perception of increased red tape arise from the lack of developable land, rather than an unwelcoming community. Mayor Eisenberger views this lack of serviced land as a major problem for the city. The success of the brownfield remediation program (ERASE) and a better framework for evaluating companies could eliminate this

perception (Eisenberger, 2006). The framework proposed in first section of this document could aid the city in decreasing the perception of red tape. If a large company wishes to set-up operations in the city, a triple bottom line assessment can be completed to gauge the utility of the company to the community and ensure there will be community support for the project.

The ERASE program, coupled with the toolsets provided by the Ontario government can be utilized to market the benefits of brownfields to potential land developers. A successful implementation of the new laws outlined in the Ontario government's Brownfields Statute Law Amendment Act of 2001 will help to alleviate the perceptions of red tape that land developers have of Hamilton.

Competition from neighboring municipalities

According to the Federation of Canadian Municipalities (FCM) Quality of Life Reporting System (2005b, p. 12), the economic growth in Hamilton was significantly less than its GTA neighbors. In the period from 1996 – 2002 most FCM member communities experienced growth. Hamilton's 60% growth can be contrasted to Halton's 90% growth and Peel region's 120% growth. According to Mayor Eisenberger (2006), neighboring communities such as Burlington, Milton, Oakville and Mississauga have been growing faster and with more success than Hamilton due to a "ripple effect" from Toronto's economic success. However, a report prepared for Hamilton's Director of Economic Development by Hemson Consulting, indicates that Hamilton is poised to benefit from this ripple effect in the years to come, especially with the newly constructed and controversial Red Hill Creek Expressway (Simpson, 2003). Ontario's Places to Grow Act, Greenbelt legislation, transportation system planning and smart growth principles will be required to direct this ripple effect into sustainable growth areas.

The reasons preventing Hamilton from fully capitalizing on business development opportunities in the Greater Toronto Area (GTA), involve the age and location of the city. Competition from other municipalities is a major reason for this occurrence. Hamilton's GTA neighbors have newer infrastructure, more green space, lower taxes and better highway access to employment lands. Hamilton is a 160 year old city with an aging municipal infrastructure. In some places original wood pipes are still being used under city streets. Neighboring communities have much newer infrastructure that is more efficiently planned than it was in the late 1800's when Hamilton was first established. Issues with the city's infrastructure are coupled with limited amounts of developable space, especially serviceable land, which can have a negative effect. A company looking to develop in the GTA may be inclined to choose a city with newer infrastructure and more options for developable space (N. Everson, personal communication, Feb. 21, 2007; O'mara, 1999).

The problem of aging infrastructure and limited space are further amplified by Hamilton's proximity to its GTA neighbors. Companies looking to develop their businesses in the GTA or similar regions throughout North America, look at the area as a whole using geographic information system (GIS) tools and demographic information (Anthes, 2005). They generally do not look at one specific municipality when many city centers are closely linked. Research conducted on forty North American high tech companies examines the strategic business drivers of location and relocation decisions. These are decisions regarding a community of interest rather than a specific piece of real estate. Overall, decisions were more heavily influenced by quality of life and labor market indicators than they were by economic and space issues. However, depending on the type of company, space issues play a part in decision making, along with tax rates and other indicators (O'Mara, 1999).

The major categories of indicators used in location selection cover a broad spectrum which includes demographics, climate, environment, cost of living, employment climate, transportation, leisure/culture, health, housing, education and safety. Neighboring communities offer services in each of these categories, so each represent a potential competition area for company location. Professional location selection consulting services are utilized by firms undergoing a major location change and would consider the whole range of options. Where large technical firms, such as biotech and computer based outfits are concerned, the quality of workforce is generally the most decisive factor (O'Mara, 1999).

Competition between GTA areas may be most fierce when companies make moves within the same general area. These types of moves can be categorized into green acres and new urbanism moves. In a green acres move the company is looking to establish a technical campus for its operations or a technology park for a group of smaller companies. This kind of development is intensive on green space and examples of these can be found across the GTA (O'Mara, 1999). Hamilton has not been able to compete with its neighbors for green acres moves because of the lack of space. This is especially true for technical companies such as computer, electrical and manufacturing companies, who choose a campus based design for their operations. Examples of this include IBM, Celestica, ATI Technologies, Gennum Corporation and numerous others who have set up operations in the GTA, but not in Hamilton.

However, the second type of location move called new urbanite moves, describes a move from the suburbs to downtown locations or brownfields. Some companies are attracted to the amenities of a downtown core that is safe and well connected to housing and major roadways. Meeting the challenge of competition from neighbors will require Hamilton to seek out new urbanite companies who want to set-up operations in inner city locations. The city could obtain

a significant advantage in attracting companies over its neighbors, if it were to study location decisions and the measures used in the evaluation.

As an example, if a new urbanite company compared Hamilton and Burlington as potential locations to set up business, they might consider transportation links and workforce pool as being equal. If this were true, then a likely comparison would be between tax rates which are on average 3.4% in Hamilton versus 1.4% in Burlington, and environmental conditions such as downtown core, developable land and access to markets. Burlington has more serviceable land, newer infrastructure and a strong economic environment (Vallance-Jones, 2001). However, Hamilton has more developable brownfield lands in its urban core, which if properly marketed and subsidized, could give the city an advantage in a new urbanite relocation.

In the future it will be important for Hamilton to market its benefits over other GTA neighbors and attract a different type of company than its neighbors attract. The cluster theory of economic development will aid Hamilton in this process. Studies show that well established and serviced clusters can attract companies to a city. Although companies in a cluster are competitors, the collaborative and supportive nature of a cluster is good for business. In a global economy where many companies are spread over multiple countries, a cluster can be the attractive edge a city needs to build a critical mass of related industries (Porter, 2000).

Lack of economic development spending

In the Policy Background Paper (Topalovic, 2006) it was noted that many people have asked the question, why is Burlington more successful than Hamilton in its economic development? One answer to this question may be found in financial data. Neil Everson, executive director of the Hamilton Economic Development Office provided figures of per capita economic development spending for neighboring municipalities (Table 1)

Municipality	Population	Budget	$/per capita
Niagara Region	410,574	$2,563,110	$6.24
City of Brantford	90,195	$ 665,800	$7.38
Halton Region	375,000	$1,846,671	$4.92
Waterloo Region	470,000	$2,090,180	$4.45
City of Hamilton*	504,000	$1,754,860	$3.48

Table 1 – Per capita economic development spending (2005)
* These figures do not include spending on the Brownfields program, the Film Office, Agriculture and Rural Affairs, the Small Business Enterprise Centre, and the Hamilton incubator of technology.

From the data it is obvious that compared to other regions, the economic development spending in Hamilton is at the lower end of the spectrum and one of the lowest per capita in the region. This lack of resources could help explain the differences in growth between Hamilton

and other municipalities. According to Mr. Everson (personal communication, Oct. 25, 2006), the issue is more complex, and comparing numbers such as the ones above could lead to an "apples to oranges" comparison. For instance, Hamilton's economic development office has a larger mandate than similar departments in other municipalities. Most departments focus exclusively on business attraction and retention, whereas Hamilton's has a broader focus including downtown renewal. Hamilton's other programs including the ERASE program and the film office are separately funded; however, neighboring economic development offices do not have these as part of their mandate.

Given all this information, it is still clear that, in Mayor Eisenberger's words (2006), "Hamilton has been out-spent on Economic Development by neighboring cities smaller than [it is]". He believes the key to attracting jobs and new business is to increase economic development spending from $1.7 million in 2005 to $3 million in 2007, and establish an economic development corporation owned by the city, similar to successful implementations in Waterloo and Burlington. According to the Burlington economic development office, the key to success is in creating a variety of industries and along with them a diverse tax base (*High performance economy: The Burlington story,* 2006). Hamilton is pursuing a slightly different strategy with its cluster-based philosophy and its attempt to diversify its economy.

Brain Drain of the city's youth population

The concept of the creative class of workers helps to explain an observed exodus of Hamilton's youth to other cities, especially young students with a university or college education (Topalovic, 2006). Other post-industrial centers such as Pittsburgh and Sudbury, have also witnessed a similar trend (*Federation of Canadian Municipalities [FCM],* 2005a). There is evidence that cities with high tech industries, liberal philosophies regarding lifestyle options, an ethnically diverse population and a tolerant attitude towards those who are different have experienced high growth and success in attracting an educated and diverse workforce. Richard Florida (2005) explains that this success is tied into a city's ability to attract a creative class of workers along with the traditional working class and service class of citizens.

The creative class is defined as a highly educated, well paid portion of the workforce. This emerging class of workers constitutes the key thinkers and designers in industries such as engineering, journalism, finance, high-tech manufacturing and entertainment. Creative class employees are generally young, university educated people who value creativity, individuality, diversity and freedom of expression. According to Florida (2005), the key to attracting this segment of worker, who are now believed to represent 35% of the workforce, is to have a vibrant, diverse cultural atmosphere with many different night life options and a mixture of

traditional and non-traditional outdoor recreation amenities such as integrated and connected cycling lanes and hiking paths, which integrate with transit systems and people friendly walkways. An atmosphere of acceptance encourages individuals who do not subscribe to the status quo to feel welcome and experience diversity. Cities need to have a sense of place and quality. It is highly important to have a vibrant downtown, a variety of living options and a high quality of life, including investments in the arts, environment, transit and culture.

In some sense Hamilton is well on its way to establishing this environment with its downtown condo developments, transportation demand management initiatives and diverse independent music scene; however, rising social problems and a decline of the 25 - 34 year old age group indicate that more needs to be done to attract this new class of people. The decline of this age group is a trend occurring across most municipalities, due in part to Canada's aging population; however, the city of Waterloo, which boasts multiple universities and a vibrant high-tech industry, has experienced a smaller decline in this age demographic than other manufacturing based cities such as Hamilton and Sudbury (FCM, 2005a). This trend could indicate that the creative class is finding more acceptance in cities such as Toronto and Ottawa which are known for their vibrant cultural diversity, high-tech start-ups and liberal attitudes. Hamilton will have to learn from these cities and others such as Austin, Texas and Chicago, Illinois which also attract high numbers of the creative class. The city of Chicago, although much larger than Hamilton, is a good case study because it has steel town roots yet is able to successfully combine the working and creative classes in productive ways. The city treats the creative class as an ethnic group as it would any other, in order to help integrate them into the overall culture of the city (Florida, 2005).

A study conducted in the Pittsburgh area (Hansen, Ban, & Huggins, 2003) confirmed Florida's research on the value of creative amenities such as the arts, cultural diversity and recreation. However, the brain drain that many post-industrial cities suffer is caused by additional factors such as job quality, job stability and a flexible workplace. Although salary is not the top priority, it is still important to recent graduates who are paying off student loans and starting a family. The study also found that the most important factor determining whether or not graduates leave the city are proximity to family and whether they have lived in the city all their life. The brain drain was found to be particularly pronounced with those graduates in technical fields. Hamilton is similar to Pittsburgh, in that it has a highly successful educational institution, but no supporting industries for some of its core programs. Most students graduating from computer sciences or engineering must look to other GTA communities to find jobs, as the key computer software and hardware firms are located in Burlington, Mississauga, Markham,

Toronto and Waterloo. The lower cost of living in Hamilton may be an attractive attribute for young graduates, but it still encourages the employee to commute, if there are no jobs related to their field in Hamilton, which for many is an unsustainable option.

Anticipated Finding 3: Political and Community Challenges

This category includes the least tangible of all the challenges. Although they are avoidable, as with the other challenges, they deal with more complex cognitive and behavioral issues. The challenges include favoring a business as usual strategy, a lack of sustainability buy-in, maintaining the political status quo, lack of political will and action, a lack of economic vision and a failure to engage the community.

Lack of Political Will

The lack of political will is of great concern to the city and has become part of Mayor Eisenberger's mandate to circumvent. He believes that without the will to achieve change there will be no ability to build consensus on the development of a new economic development vision (personal communication, Feb. 4, 2007). According to a research thesis on sustainable communities conducted by McMullan (2002), some of the Hamilton staff interviewed indicated that senior staff were not following Vision 2020's sustainable decision making directives. Many development project approvals were given without consideration of sustainable development implications. In addition, according to Brian McHattie (personal communication, March 12, 2006), the annual Vision 2020 indicator report has not been released since 2004. Without an indicator report, it is difficult for the city to monitor its progress on specific Vision 2020 goals. This is due, in part, to the fact that until recently the Vision 2020 coordinator position has been vacant since the last coordinator left in 2005. However, it is important to note that some major indicators that are not specific to Hamilton, but are relevant to sustainable development, are covered in Federation of Canadian Municipality reports.

Economics and Competing Issues

Lack of political will and vision arise for a number of reasons. First and foremost, in a city with a tight budget being mainly used to fund social programs, city staff has little time to devote to new initiatives. In many cities similar to Hamilton, sustainability is not as high on the agenda as are economic pressures associated with housing, zoning changes and poverty eradication (Moore, 1995). Moore refers to these as competing issues, some of which have precedence over others. Many residents, city councilors and staff do not understand that one issue can

affect another since they tend view policies as being standalone directives that should be fulfilled to the expectations outlined.

When sustainable developments require funding, it must come from some other program's funding or from a property tax increase. Generally, when there is no direct or measurable benefit, there is no incentive to undertake a sustainable initiative such as pollution control (Moore, 1995). For example, many of the sustainable initiatives, including brownfield site remediation, have high costs. The city could develop brownfield lands and then try to sell them once they are remediated. This would make those lands much more palatable to developers, because there would be no liability issues or extra development costs. At the same time, this would involve a much greater financial investment from the City than if it were to work with a company on a joint remediation project under the ERASE program (B. McHattie, personal communication, March 12, 2007). The city needs to ensure that citizens understand the tradeoffs involved with sustainable policies and that the issue of conflicting interests can hinder the attainment of sustainable goals.

Lack of Empowerment

A perceived lack of empowerment to produce change is also related the concept of political will. According to Moore (1996) many city staff and citizens believe that they cannot change consumptive behaviours, such as overuse of automobiles and unnecessary production of waste, because it is a problem with North American culture rather than localized phenomena. McMullan's interviews (2002) with Hamilton city staff also indicated that there is the perception that change can only come from senior levels of government, such as the provincial and federal governments. This is especially true with the provincial downloading problem. In the 1990's the provincial government downloaded social services to municipalities which, according to the Centre for Community Study, is responsible for much of Hamilton's increase in property taxes (*CSD, 2006b*).

Furthermore, there is the belief of city staff that technological advancements have more worth than public policies in advancing sustainable development (Porter, 2000). This belief has been refuted by many experts who have extensively researched the triple bottom line of sustainable development. It has been shown that social improvements can be as effective as technological improvements in many different industries, public institutions and private corporations (Elkington, 1998; Hawken, Lovins, & Lovins, 1999; Willard, 2005).

Governments and Citizens

Political will and lack of empowerment also relate to a government's relationship with its citizens. Citizens can sometimes feel that they have little ability to become an integral part of the decision making process. According to Brewer and Hayllar (2005, p. 2), citizens must taken ownership of public policies if they are to accept them. "Despite the improvements promised by recent public sector reforms, current levels of citizen distrust in government, both in developing and developed countries, pose a serious threat to the capacities of governments to govern effectively." Building social trust and social capital are important ways to empower citizens to become part of the process. However, public consultations that offer citizens limited input do not bring about this change. Only true consultative and transparent processes can engage citizen stakeholders (Lang, 2007).

Hamilton can learn from this research and ensure that citizens feel empowered as part of the decision making process. The city learnt from its experience with the Red Hill Creek Expressway and the format of public consultation. Some residents felt that the process was one sided with the outcome pre-determined (McClean, 2005). Political debate over the Lister Block, a crumbling downtown heritage building, Aerotropolis, a development plan for the airport lands, and the Maple Leaf food's development proposal have been marked by confrontation and a lack of transparency (*Centre for Community Study [CSD],* 2006a). These experiences can serve as learning examples that city staff can examine, in order to ensure that future challenges are dealt with in a way that more clearly engages the public.

Maintaining the Status Quo

This challenge affects governments, corporations and citizens alike. The Latin term "status quo" is defined as the desire to keep things the way they are. It comes about from a variety of factors and centers around a lack of understanding of sustainable development on the part of politicians, citizens, business leaders and bureaucrats. The issue is further complicated by an organizational trend towards bureaucratic fragmentation and resistance to change in municipalities. This section aims to connect the research on the status quo to Hamilton's sustainable development and understand its effects.

Lack of Understanding of Sustainable Development

According to Smith and Scott (2006), the lack of understanding of ecological sustainability is considered a fundamental challenge to achieving change. Many community stakeholders, including citizens, government officials and business leaders have a limited knowledge of how their actions influence sustainability in a positive or negative way. Interviews of Hamilton city staff indicated that, "the broad and highly nebulous nature of urban sustainability has left it open

to a variety of (often contrasting) interpretations in different departments." (McMullan, 2002, p. 192). Furthermore, research by Bob Willard (2005) indicates that there is confusion surrounding the benefits of sustainable development amongst many corporate leaders who remain skeptical. These facts indicate that more education is necessary for all city stakeholder groups in order to help them understand the benefits associated with sustainable development.

According to Brian McHattie (personal communication, March 12, 2007), one of the most pressing challenges, in terms of attracting sustainable business, is by what criteria shall a company, small business or municipal department be judged to determine if they are sustainable. One way to meet this challenge is to develop a set of indicators, outlined in the Policy Proposal (Topalovic, 2006), and use these as the basis to evaluate the level of a firm's performance along financial, social, ethical and environmental measures.

Bureaucratic System

From an internal political standpoint, one of the challenges associated with maintaining the status quo is the bureaucratic system. In general, the system is both resistant to change and segregated. Various studies (Partington, 1996) outline the fragmented nature of bureaucracies and an inherent resistance to change that hinders new policy formation. This resistance to change is fostered by the bureaucratic personality, which Ham and Hill (1993b) describe as being inflexible and rules based, thereby ensuring that hierarchies and order are well defined and adhered to.

According to Wilson (2000) bureaucratic departments are characterized by inflexible hierarchies and power arrangements that exist to intentionally maintain consistency and stability. However, in times when a policy change is necessitated by an ideological shift, demographic changes, economic crisis, or a major event, the bureaucracy must respond. This response takes the form of shifts in organizational arrangements, patterns of power and policy paradigms; Wilson refers to this as regime change. Hamilton is experiencing a time of change, according to Wilson's criteria. Dire economic times, the threat of climate change and new regulations to respond to it, and changes in Hamilton's demographics are putting pressure on the bureaucracy to change its policies regarding sustainable development.

Hamiltonians are concerned about the sustainability of their city, workplace and recreational areas. The local news has begun to reflect these concerns and has recently covered issues such as the changing demographics in the city, green house gas production and health issues related to pollution (see section A1 in the March 12 to 16, 2007, The Hamilton Spectator). Bureaucratic leaders recognize this and are preparing to usher in a new era of change. Although the progress has been slow, the city's civil servants must be given credit.

Generally, sustainable development directives are vague, timelines are approximate and goals are not always attainable. Ham and Hill (1993a) explain that a top down policy may not be implemented properly due to a variety of factors, first of which is the separation between policy making and implementation. In many cases, the theory developed in a policy may not work well when one attempts to implement it. Some policies are not practical, while others need to be adapted to certain situations or change because of new information.

Inappropriate Structure of Government

Another related challenge to attracting sustainable companies is the inappropriate structure of government. According to Moore's research with the city of Vancouver (1996), it was found that the fragmented nature of city departments did not allow for implementing sustainable initiatives. The administrative framework did not naturally fit with the ecological systems that were being managed. Whereas, ecological systems are closely related and interdependent, government departments are segregated physically and monetarily. Attracting sustainable companies requires cooperation between departments and an understanding of ecological systems. When companies are selected for a certain location, their ecologic impact must be understood and the company's location should be able to accommodate their product manufacture in a sustainable way (Berke, 2002).

A Business as Usual Strategy

A "business as usual" strategy is one in which normal operating procedures are followed to ensure the successful operation of the firm and applies equally to corporations, municipalities and citizens. While this can be a sound strategy, it can also hamper innovative ideas and new initiatives (Loorback & Rotmans, 2006). In terms of budgeting, it can be difficult for a municipal department head to justify a large capital expenditure on a sustainable measure for a return over the long term, such as lower health care costs, or a site remediation. This is understandable since citizens want to see that their government is meeting its mandate. The four year political term fosters short term mandates and discourages long term ones. This causes a conflict between the long-term nature of sustainable development initiatives and the short term nature of political terms and mandates (Hoogma et. al., 2005).

Politicians do not want to cause a perceived negative impact on the community, for a fear of losing constituent support (Lindblom & Woodhouse, 1993). If the initiative to attract sustainable companies is perceived as being selective of which companies should be allowed to set up a business in Hamilton, it will be viewed as having negative economic impacts.

Politicians and business leaders should be aware of the true nature of the policy, which is to help seek out companies who would benefit Hamilton along the triple bottom line and not to be used as a filter to weed out unsustainable companies (Topalovic, 2006).

Proposals for radical policy changes can be perceived as political threats because of the large scale change in the economic development of the city. Respondents interviewed by McMullan (2002) cited an inherent resistance to change within the municipality, especially when ideas were considered radical or differing from the norm. In order for new ideas to be given due consideration a tendency to employ a business as usual strategy may need to be reconsidered.

A Lack of Understanding of the Business Case for Sustainable Development

Paul Hawken's research (1999) indicates that sustainable solutions must be planned over the long term to realize their true monetary benefits. Whereas most firms and governments would like to increase quality of life, they generally make a tradeoff between quality of life and productivity. The industrial revolution placed an emphasis on human productivity and fostered the development of a growth orientated society. Embedded within this philosophy is the idea that unlimited natural resources are available to increase the productivity of humans and at the same time improve their quality of life. Although, this idea has been institutionalized over time, Willard's (2005) research on corporations has shown that people are working more, taking less vacation and living increasingly unhealthy lifestyles.

Hawken and Lovins' (1999) and Elkington's (2004) research show that sustainable companies are more profitable, invest more in a community, decrease their impact on the ecosystem, improve employee health and empowerment and reinvest in the environment. A sustainable company has learnt to simultaneously improve quality of life and increase profitability. Some of the strategies employed to achieve these results include eco-efficiency, community and stakeholder involvement, design for the environment, life-cycle analysis, workplace improvements, and use of alternative energy sources.

One major challenge to attracting sustainable companies is that many legislators, business leaders and citizens do not believe in or understand the business case. Bob Willard (2005) also notes that the rejection of the business case may arise from several factors. In addition to a lack of awareness or belief, some leaders are uneasy about being accused of "greenwashing" or false advertising, while others dismiss sustainability on the grounds that it is irrelevant to their business. According to Mayor Eisenberger (personal communication, Feb. 4, 2007), the city suffers from "a lack of economic vision [and] focus with the political [and] public consensus to back it up."

An economic vision should incorporate the business case for sustainability because it is based on sound economic and social evidence that has proven benefits for the community. The new economic policy suggested by the mayor should recognize that sustainable initiatives have high costs in the short term, but in the long term, they reduce costs substantially through reduction of health care expenditures, site remediation, decrease in crime rates, cost savings from efficient buildings, reduction of waste management needs, decreased congestion, increased mobility and an overall increase in quality of life (Hawken, 1999). Research conducted by Florida (2004), the Federation of Canadian Municipalities (FCM, 2005b) and others have shown that an increase in quality of life can increase the amount of economic development in a city.

Failure to Engage the Community

The North American lifestyle centered on free markets, commerce and consumption is another major challenge facing the attraction of sustainable companies to the city. Without sustainability buy-in from Hamilton's citizens, it will be difficult to justify expenditures on sustainable initiatives.   According to McMullan's (2002) interviews with Hamilton bureaucrats, politicians and citizens, Hamilton needs to dedicate more resources to encouraging sustainable lifestyles. Tax payers must understand their integral role in the sustainability process. If they are properly educated on the financial and social benefits of sustainable living, green buildings, rapid transit and eco-efficiency, they might be more inclined to accept the philosophies and help implement the recommendations of Vision 2020. This would naturally lead to an acceptance of policies which aim to attract sustainable companies. Willard (2005) found that if issues of sustainability were phrased in terms of societal and monetary benefits as opposed to using altruistic language to encourage change, the rate of participation in sustainable initiatives would increase.

Integrating Vision 2020 into lifestyles

A major issue surrounding Hamilton's sustainability is the perceived inadequacy of Vision 2020. In the movement's more successful years only 22% of the population had heard about the Vision. With a lack of indicator reports and no director until recently, it can be assumed that the popularity of the Vision has lessened over time. Understanding the Vision is the key to educating the population and creating acceptance of new sustainable policies such as attracting triple bottom line companies to the city. At the same time any attempt at education must be

accompanied by a willingness to change. If a community does not want to change then education will not be effective (Senge, 2004).

The Sustainability Revolution

The on-going threat of climate change, the peak oil crisis and the popularity of Al Gore's *An Inconvenient Truth* documentary may be changing the way Hamiltonians feel about sustainable development. Evidence also shows that a new revolution is beginning to take shape in the form of a sustainability revolution. More consumers are buying green products, shopping at green stores, driving greener cars, pumping greener gas and vacationing at green hotels. The market for green products and services in the United States was 440 billion dollars in 2003 and in 2004 the Cone Corporate Citizenship Study showed that 70% of Americans take into account a company's social and environmental commitment when making investment decisions (Johnson, 2004).

On a more local level, the Hamilton Spectator articles on climate change may also help to create awareness (Fragomeni & Vallance-Jones, 2007). Sustainable education will most likely start with a Spectator initiative or special report. Council and city staff should work with the Spectator on increasing awareness, especially in regards to attracting sustainable companies. Initiatives such as Air Quality and Climate Change strategies and Hamilton's Stormwater Management strategies are good local examples of encouraging more sustainable citizen lifestyles. Roberts (2000) suggests that a bottom-up approach to building consensus on sustainable development will be effective in creating change in a city. Grass roots movements from Non-Governmental Organizations (NGOs) such as Skydragon, Environment Hamilton and Green Venture may help residents understand the ideals of the triple bottom line and begin to incorporate it into their daily lives.

A City Divided

Research conducted by the Centre for Community Study indicates that there is a competing set of visions at City Hall. In the election of 2003, this was represented in the ideological differences of mayoral candidates David Christopherson and Larry DiIanni. Christopherson advocated Smart Growth principles, which entail the maintenance of a compact urban boundary, environmental sustainability and in-fill economic development which includes brownfield remediation and downtown core revitalization (*CSD, 2006a*). DiIanni favored a more business as usual approach of Sprawl Growth which consists of residential sprawl, big box commercial developments and suburban style economic development which includes greenfield developments and highway infrastructure. This division became evident in the voting patterns of council with members from the West favoring Smart Growth and members from the East

favoring Sprawl Growth (*CSD, 2006a*). This division on council does not foster sustainable growth in the city, nor does it help engage citizens.

Attracting sustainable companies to Hamilton is based on the principles of Smart Growth, transparency and accountability. Citizens must be aware of the difference between these growth strategies and elect council members with the expectation that they will engage in Smart Growth. The election of 2006 indicates that the population is heading in this direction. Mayor Eisenberger campaigned on a platform of Smart Growth and defeated DiIanni. However, the East-West divide is still prevalent with the majority of DiIanni's support coming from the East of the city (*CSD, 2006a*).

SECTION 3: MEETING THE CHALLENGE

Hamilton, like most post-industrial cities, faces significant challenges to sustainability. The identification and categorization of these challenges is vital to the future growth of the city. Once they are identified, progress in meeting each challenge should be measured and reported. Beginning this process will require analysis and development of policy making initiatives. The following section summarizes case studies and strategies used by other municipalities to become more sustainable, eco-friendly and attractive to small and large businesses. The case studies will be discussed along with suggestions of what internal measures and frameworks the city can implement to ensure progress. Throughout the discussion of the challenges to attracting sustainable companies, suggestions have been made on how a particular challenge could be met. This section provides additional strategies to resolve the issues facing the city, but deals with them on a more general level summarized under the relevant categories: leading by example, economic development and the business case, and integration, quality of life and new urbanism.

Leading by Example

The Policy Background Paper (Topalovic, 2006) contains evidence that leading by example is an important strategy which can be used to inspire greater sustainability initiatives and compliance. There are many cities in the world who find themselves in an economic crisis due to the newly emerging global economy. Factories are closing and moving south and economic development is now equated with the ideas of a livable community as opposed to exclusively economic factors. A livable community is one with a high quality of life, a sustainable environment and an involvement of citizen-stakeholders in civic life (Regelson,

2005). Many of these municipalities are using sustainable development and the techniques of eco-efficiency to improve their own operations and attract new business. In the design of the TBL evaluation framework and the GRIDS strategy, the city of Hamilton worked with the city of Melbourne in Victoria, Australia. This is evidence that a movement to evaluate growth options according to the triple bottom line is emerging world wide, in developed nations. According to Brian Mongomery, Hamilton's Air Quality Coordinator, the City of Calgary was so impressed by Hamilton's TBL initiatives that they used it as the basis for their own sustainability blueprint (personal communication, August 26, 2008).

Good leadership in a municipality should be supported by a strong political will to undertake initiatives and achieve goals. Hamilton's Building a Strong Foundation program (2004) embodies these key elements for implementing sustainability in cities. According to Regelson (2005), these elements are leadership, a plan, funding, reduced energy costs, communications (websites and fact sheets), training, inspections, audits and measurement, efficiency rebates, green building, and attracting sustainable business. The cities of Austin Texas, Chicago Illinois and Portland Oregon have been successful at incorporating these principles. Hamilton could adapt the tools and techniques these cities have used to support its sustainable growth initiatives.

Investing in Alternative Energy

There is another municipality in New South Wales, Australia that is also setting an example that Hamilton can learn from. The city of Newcastle is similar to Hamilton in many ways. It is a steel town with a troubled manufacturing industry and a world class university located at the mouth of a bay. Newcastle's municipal council enacted a plan to reduce municipal energy and waste consumption. They monitored green house gas emissions and waste sent to landfill to develop indicators and bench marks. Eventually these example setting initiatives helped to establish the city as a green-energy centre. The city is now in a position to provide sustainability consulting services to other municipalities. At the same time, Newcastle is building on this emerging cluster by becoming a provider of alternative energy and partnering with manufacturing and research firms who wish to set-up operations and establish partnerships within the city (Kennedy, 2003).

The City of Hamilton can learn from this example and use its Vision 2020 indicators to monitor energy consumption and green house gas production and focus sustainable initiatives on problem areas. The movement towards clean energy initiatives is already underway in Hamilton with the establishment of Hamilton Renewable Power Inc. and the building of an electricity cogeneration operation at the Woodward sewage treatment plant. The potential for

growth and the establishment of a profitable renewable energy cluster, similar to Newcastle's is well underway to becoming a reality. In another recent development, a company by the name of Cleanfield Energy Corporation, has moved their head office from Mississauga to Hamilton and will be installing 150 wind turbines on top of municipal buildings. The new type of wind generators are shaped as egg beaters instead of the traditional windmill and promise large energy gains (*Clean Field Energy,* 2005). In order to support these alternative energy developments, Hamilton should commit to purchase a certain amount of its energy from clean renewable sources.

Eco-efficiency and Green Buildings

The city of Hamilton is one of the largest landowners in the city with numerous municipal buildings, recreational facilities, and downtown properties. The city's potential to realize cost savings and generate revenue with green building is well within reach. According to Brian McHattie (personal communication, March 12, 2007) a community improvement plan offering incentives for green buildings was in the development stages. This plan comes at a time when American studies show that 40% of the country's energy costs and pollution can be attributed to residential, civic, commercial and industrial buildings (US Green Building Council, 2003).

In conventional building design each phase of development is a segregated step supervised by one or two of the stakeholders in the project. A typical building project involves the owner, architect, construction team and the tenant. This segregation provides little incentive to implement sustainable initiatives, as each stakeholder aims to maximize profits and minimize costs. Outdated design rules and the copying of old designs are utilized to increase design or construction efficiency and decrease costs per phase. The emphasis on minimizing initial costs rather than the costs of ownership results in inefficient building designs and significantly greater building upkeep and energy costs (Hawken, et. al, 1999).

Green designs are currently available at comparable costs to traditional designs; however, on average green buildings require 2 – 7 % more in upfront costs due to the use of efficient technologies (US Green Building Council, 2003). These technologies reduce the use of toxic substances, integrate life-cycle and long-term costing, and provide energy and water use efficiencies.

The most radical change in green building design is not new technologies; rather it involves the integration of all stakeholders over each design phase. Emphasis is placed on the building design and construction process as much as it is placed on eco-efficient technologies. The Leadership in Energy and Environmental Design (LEED) specifications and certification standards promote a holistic building design strategy and provide developers with the tools they

need to construct or upgrade buildings that save money and the environment. The use of green building designs under LEED certification by the United States Government has provided a 23% energy saving per square foot of green building space which has saved $1.4 billion dollars as of 2003 (US Green Building Council, 2003).

The city of Chicago and New York have made green buildings and green roofs a priority. The covering of building roof tops with grass, plant life, agricultural waste, plant slurry, compost and animal manure promises to lower building cooling costs, contribute positively to the surrounding ecosystem, create a natural environment in the city and save municipalities money (Gleason, 2006). This new natural technology is also an important research tool in helping to reduce resource use in a municipality and allows students to conduct ecological experiments in a natural environment.

Hamilton could provide incentives for green building developments, while implementing its own green building program. This would have the dual benefit of strengthening Hamilton's sustainable reputation and lowering operating costs. Green buildings also help to meet the challenges of increasing quality of life and decreasing municipal tax rates, which were identified as factors impeding sustainable companies from coming to Hamilton. The City of Toronto's Green Roof Pilot Program provided rebates for residential and commercial green roof construction projects. The interest in the program and its success has promoted green building developments in the city and reduced storm water management and building energy costs (City of Toronto, 2008).

According to Rogozinski (2004), there are five key ways to encourage green building. The city could ensure bylaws encourage green initiatives and infill development, implement education programs for building inspectors and the development community on the positive aspects of green building, address liability issues with green buildings and improve the permit process so that integrated and holistic designs are implemented with little red tape or extra wait times for approvals. Hamilton's City Hall retrofit is good opportunity for the city to demonstrate its green building prowess and create a building-showcase that goes above and beyond basic LEED certification; one that implements the principles of eco-efficiency, closed loop recycling and natural capitalism (Hawken et. al., 1999). The current activities of Hamilton's Office of Energy Initiatives aim to implement these strategies which are outlined in the City's energy policy and pursuit of renewable energy projects (*City of Hamilton,* 2007).

Green Buying Power

Green roofs and green buildings are not the only strategies for efficiency and cost savings that a city can implement. Similar to Hamilton's initiatives, New York City recently switched all

traffic signals to energy-efficient LEDs saving the city $6 million dollars a year. They also replaced refrigerators in public housing which saved $7 million dollars a year. According to Michelle Wyman, Executive Director, International Council of Local Environmental Initiatives, USA (ICLEI-USA), "It's estimated that replacing 500 incandescent exit signs with Energy Star versions would save $25,700 a year, $208,300 on maintenance and energy costs and 1,190 tons of carbon emissions, respectively." (Wyman, 2007).

According to Wyman (2007), cities need to calculate the direct and indirect cost of a product or service over its entire lifecycle to realize true cost savings. As more cities develop green buying strategies they will fuel the market for green products and services lowering their price and increasing their availability. Green procurement has the ability to decrease municipal expenditures, increase quality of life, decrease property taxes, create a market for the local development of green products and therefore attract sustainable business. As an offshoot, it can promote the adoption of green procurement strategies amongst citizens and homeowners (McGregor, 2005). The key to implementing a green procurement strategy requires education of city staff and residents to help them understand the difference between full lifecycle costs and initial costs. A product purchase choice that looks more expensive in a financial ledger can actually be a more cost effective solution than a similar but cheaper product. For instance, the use of municipal hybrid vehicle fleets has a much greater initial cost, but a far greater fuel savings in the long term. Hamilton's green fleet program aims to accomplish this task with city owned vehicles (Hill, 2006).

These types of policies can help resolve the challenge of competing interests in a bureaucracy by centralizing purchasing power and creating a multi-departmental strategy to procurement (Wyman, 2007). According to the North American Green Purchasing Initiative (NAGPI), other benefits that complement the business case for green procurement are the benefit to the natural environment, employee and citizen health and wellness and the stimulation of markets for innovative new products and services (Commission for Environmental Cooperation, 2007).

Land Banking and Brownfield Redevelopment

Throughout this document, brownfield and inner city development has been suggested as a possible solution to revitalizing the downtown core, reducing urban sprawl, remediating abandoned lands and reducing the perceptions associated with the downtown and industrial areas of the city. The problems associated with brownfield development have also been discussed - they involve more initial costs for remediation, environmental assessments and liability. This discourages companies from undertaking developments in the city. One way to

make brownfields more appealing to developers would be for the city to perform site remediation without a specific developer-partner. The land could then be banked and sold as a prime, serviced land. The main roadblock to undertaking this type of initiative is that it requires a large initial investment from the city without guaranteed returns. In terms of land, the city has a sizeable amount of tax-reverted and brownfield land which it could re-develop (N. Everson, personal communication, February 21, 2007).

A study conducted by Dewar (2006) indicates that there is a possibility that a remediation and banking strategy could work in Hamilton. The study involved two cities that have similarities to Hamilton. Cleveland and Detroit are both manufacturing cities who have experienced a decline in the number of jobs and an increase in poverty since the 1950's. The banking of abandoned or tax-reverted land reduced the uncertainty associated with brownfields and encouraged development in both cities. Developers were also encouraged by the fact that direct costs to developers were reduced and the transfer of the land did not involve large amounts of red tape (Dewar, 2006). However, the sites surveyed in this study were not necessarily contaminated lands and so the expense for remediation may not have been as involved as it could be for some of the brownfield sites in Hamilton. If the city of Hamilton wishes to attract redevelopment, leading by example could help demonstrate successful programs, including remediation projects in the core, and encourage more development from firms other than the city.

Implementing Vision 2020

Criticism of Vision 2020 has been noted at various points in the discussion of challenges facing Hamilton. Residents have little understanding of what it is and council has not seen a report on the status of indicator measurements since 2004. Addressing Vision 2020 shortcomings is a great starting point for the city to take a leadership role in. For instance, the city can respond to the criticism that there is a lack of implementation and follow up on the status of Vision 2020 indicator measurements. According to Moore (1996), the experience of Vancouver's Clouds of Change environmental policy, indicated that a more grass roots implementation of the strategies was required to affect change on the local citizen level. It was also found that when indicators were tied to economic, social and environmental success, the recommendations were taken more seriously. Each project in the city should be evaluated on how well it meets Vision 2020 guidelines and when it does satisfy the requirements, the cost savings, social benefits and environmental successes should be reported via the web and to council. However, the City currently lacks the staff to do this effectively.

The city may also benefit from fully integrating Vision 2020 principles into the daily business of the municipality. This would demonstrate to citizens the city's commitment and promotion of the Vision (McMullan, 2002). One area the city could demonstrate its efforts in is waste diversion. This has recently become a hot topic as Hamilton is aiming to divert 65% of its waste from landfill. To encourage citizens, the city could develop a reporting system that indicates the successes of municipal departments in their recycling, composting and reduction strategies. These reports could encourage residents to match the city's efforts.

Economic Development and the Business Case

This set of solutions is possibly the most important to the city. Many of the challenges the city faces deal with greenfield development, perceptions from outsiders, competition from neighbors, high taxes, a business as usual strategy and maintenance of the status quo. This section aims to provide some starting points on how to meet these challenges based on case studies and academic literature. However, this area will be one of continual learning, change and evolution. As the city grows and develops it must strive to evaluate and re-define the challenges it faces. The solutions discussed in this section involve the concept of investability, clusters, stakeholder involvement, understanding the business case, smart growth principles, renewal efforts and marketing. The kernel of this section is taken from the Policy Background Paper (Topalovic, 2006), as it relates to attracting sustainable companies to Hamilton

Investability, Clusters and Stakeholder involvement

Throughout this document, it has been established that a successful city must be dynamic and inclusive to achieve economic and social success. Issues, such as how attractive the city is to investors, the city's strategy in the development of emerging clusters and the amount of involvement that citizens have in policy making are important facets of a city's ability to grow and succeed.

Investability is the measure of actions, policies and the current state of a region and their effect on increasing the overall investment in that region. This idea is not related to job creation and subsidies. It focuses on educating citizens to create a skilled workforce, improving the local economy and creating a healthy environment to make a region more attractive to investors. Instead of developing one cluster at a time, investability deals with a more holistic approach of development across all clusters (Begg, 2002).

To ensure that a city is attractive to investors, it must succeed in several categories that may not be directly associated with a particular investment. These include availability of industrial land, quality of the local labour force, social factors including crime levels, quality of

life, and environmental factors. By applying this strategy, a city can identify its strengths and weaknesses in order to improve its competitiveness in the market-place. Hamilton can apply this strategy by developing the regional aspects that are most appealing to investors. This includes efficient transportation systems, access to the airport, reasonable property rental prices and site availability. The development of research parks, industrial parks and public-private partnerships compliment this theory of economic development and help to develop a city that is highly appealing to investors (Begg, 2002).

Public-Private Partnerships

Hamilton has recently embarked on the establishment of public-private partnerships with the building of the McMaster Innovation Park. The science park is a cluster of knowledge-based industries that partner with the university to develop new products and conduct research. These parks also facilitate the creation of local spin-off companies which are formed when employees or students use their acquired skills to establish their own firm or facility to produce a related or entirely different product. A science park fosters collaboration and networking amongst faculty, students and industry which has an overall positive effect on the region creating new jobs, industries and land-use potentials (Doloreux & Gubeli, 2005). The cluster development potential for science and industrial parks is well documented and can help a municipality attract business. However, the municipality has a major role to ensure that these territories make use of brownfield space, and promote sustainable research and development. Hamilton and McMaster have done this with the use of the former Camco brownfield site (Hamilton Economic development, 2005b).

A multi-stakeholder involvement and consultation process is vital to the success of these sites. The park developers should take into account the area's triple bottom line effects on the surrounding community and the community should have input into the creation of the park and its uses (Bonte, 2004). Important considerations include the environmental effects of the park on nearby residents, the safety of the park's location, and the proximity to the workforce. According to Bonte (2004), a business park must include companies that meet TBL requirements and promote urban development rather than suburban sprawl.

Hamilton's GRIDS strategy will have an important role in developing these parks. The company evaluation tool proposed in the Policy Document (Topalovic, 2006) could have an important effect on choosing the right companies to occupy the park. Companies that are sustainable will be better able to accommodate the needs of the citizens and other stakeholders who will be affected by the park's operations. The Maple Leaf Foods issue could have been avoided with a multi-stakeholder consultation process and an evaluation of the company before

it was approached. Ultimately, a sustainable park can further development goals and attract businesses to the city.

Smart Growth, Vision 2020 and Economic Vision

The concept of smart growth has arisen at several points in the discussion of the challenges. From the evidence it is clear that the strategy is not accepted by the entirety of council (*CSD, 2006a*). Council must rectify their differences over differing growth strategies and attempt to reduce the impact of sprawl. One important way to educate others on the advantages of smart growth is to present a business plan on the financial and social benefits of this strategy, such as the financial impacts of Vision 2020 indicators. For instance, increasing urban transit use and reducing car use, reduces road repair and infrastructure costs, decreases the need for new roads in the future, decreases green house gas emissions, and increases the revenues from transit use, keeping taxes lower (VTPI, 2008).

Hamilton's Rapid Transit Feasibility Study (RTFS), Transit Oriented Development (TOD) strategies and Transportation Demand Management (TDM) initiatives are important to the circumvention of sprawl growth and the health of the community. Evidence shows that TOD encourages high density, mixed use building developments that are integrated with transit nodes. When higher order rapid transit such as light rail is implemented in a transportation corridor, land values increase along with property tax revenues (Cervero and Duncan, 2002). Appendix F provides breakdown of land value benefits. This income to the municipality is complimented by the removal of cars on the road, decrease in smog days, decrease in health care spending and an increase in walking, cycling and transit use. However, for transit initiatives to be successful they must be complimented by cycling plans, bike lanes, integrated multi-modal transit connections and secure bike parking (Handy, 2005). Appendix G outlines the benefits of light rail transit and its integration with other facets of transit oriented development that makes it successful.

Council could also focus on building consensus rather than competing over issues and visions for the future of the city (*CSD, 2006a*). Vision 2020 has the ability to unite competing visions and represent the needs of all stakeholders. According to Mayor Eisenberger (2006), the economic vision for the future must be built on political consensus. Incentive programs should be developed alongside business retention programs to ensure that small and large businesses are properly supported. This support includes infrastructure improvements such as increased Go Transit in the downtown core to support the office cluster. These examples are part of an integrated strategy that unites the current initiatives being undertaken in the city such as downtown renewal, innovation park development and airport lands issues (F. Eisenberger,

personal communication, Feb. 4, 2007).   The mayor's strategy is one of smart growth, integration, consensus and sustainability. It complements the cluster based theory of economic development which the city is currently implementing.

According to Malcolm Gladwell (2003), the sustainability tipping point occurs when 20% of a community adopts a new idea or trend. This group of people must have the right mix of leaders, communicators and sellers, who will sell the ideas and vision to others. In creating an integrated strategy for economic, social and environmental sustainability, the goal should be to get 20% of the community on board as a starting point to build further consensus amongst the populace (Willard, 2005).

Marketing Hamilton's Strengths

Most of the people interviewed for this project including Mayor Eisenberger, Neil Everson and Brian McHattie agreed that more needs to be done to market Hamilton to potential developers, investors and citizens. With new budget money, the office of economic development will be hiring a new team member who will be dedicated to the task of marketing the city. The Invest in Hamilton brochure is an initial marketing tool that outlines the new economic development initiatives that have been undertaken. The office also developed an on-line business directory to support and advertise the services of local firms (N. Everson, personal communication, Feb. 4, 2007). This is a good start; however, there is a great deal more that the city can do to market itself. There is also a great deal of literature that could guide a discussion on marketing the city. The following briefly highlights key items that are applicable to Hamilton.

The literature indicates that outsiders and citizens tend to stereotype a city based on its past history. Many times the social, physical, cultural and economic aspects of a city can be exaggerated and have long lasting effects, even when positive change is made to correct the issues that were responsible for the stereotypes (Hall & Hubbard, 1996). At the turn of the century, industrial cities were celebrated for their progressive manufacturing industry and ambitious development plans. Smokestacks were a sign of this progress, improved social welfare and a promising future.

This societal view shifted in the mid 1970's and the same images of industrialization that were associated with progress became associated with financial crisis, unemployment and dirty pollution. This put industrial cities at a major disadvantage and required them to re-image their city using the concepts of innovation, creativity, culture, safety and environmental cleanliness. "Cities with more positive imagery are associated with the postindustrial era, the future, the new, the clean, the high-tech, the economically upbeat and the socially progressive." (Reed, 2003; Short, et. al., 1993). Re-imaging has been an issue that has surfaced in the Hamilton Spectator

on numerous occasions. This is evidenced in a recent article searching for new slogans to redefine Hamilton's image. Some examples of new slogans include: the education city, the city of waterfalls, the environment city and many more (Brown, 2007).

Place promotion is a strategy that has been adopted by many municipalities, especially those who are in highly competitive environments. This strategy involves marketing the city as a source of economic power and wealth. Re-imaging the city helps to improve its competitive position and its investability. Industrial cities, such as Hamilton must focus on quality of life and triple bottom line promotion in order to attract new investments. It also has the duel effect of promoting civic pride, which may aid in building acceptance for sustainable ways of living. According to Stephen Ward:

> A specifically promotional policy repertoire has also emerged. Its staples include place logos, slogans, advertising, public relations, subsidies, tax breaks … development projects, flamboyant architectural and urban design statements, trade fairs, cultural and sporting spectacles, heritage, [and] public art … At the core of these manifold endeavors is a concern with making and propagating place images that are sufficiently attractive to persuade place users, principally understood as visitors and investors to part with their money. The place is packaged and sold as a commodity (Ward, 1998 p. 1).

Industrial cities have to place a new emphasis on availability and accessibility to land, including the waterfront, parks and trails. Vision 2020 is a part of this re-imaging, as it focuses the city on triple bottom line development that unites the urban area with its natural surroundings.

One strategy would be to market Hamilton as a model of sustainable living and a showcase for the co-existence of nature and industry. Social and sustainable marketing campaigns that encourage green lifestyle and highlight the work Hamilton has done to improve quality of life for citizens, will be a key aspect of Hamilton's place promotion. This can be complimented by an interactive quality of life website associated with Hamilton's sustainability revolution. (McMullan, 2002; Ward, 1998). According to Short (1993), the industrial city must disassociate itself from its industrial image. The view of the industrial core from the skyway bridge makes this task difficult for Hamilton. Recently, council has begun to address this problem by brainstorming ways to detract from this image. They have suggested a large geyser in Hamilton's harbour, a wind power farm and advertising space on the skyway bridge. The mayor agrees that Hamilton must invest in its image; however, there is some question as to what direction council should move in (Macintyre, 2007).

Empowerment has been a key topic in the discussion surrounding marketing, civic pride, transparency and green procurement. According to Sue McGregor (2005, p. 440), providing the population with information such as buying tips or energy saving strategies, enables them with the "means to do something." Empowering citizens, on the other hand, involves building the

perception that they "have the authority to take action – an inner perception of power. Inner power is created by oneself." Building this inner power is especially important for citizens that are less fortunate or have been marginalized. If Hamilton's citizens are given input into decision making and their opinions are valued, they will be able to take ownership of their city. Marketing efforts should focus on the inner strength and knowledge of the citizens and encourage them to participate and contribute.

Integration, Quality of Life and New Urbanism

Sustainability is associated with the integration of economic, social and environmental aspects of urban living. It recognizes the interactions between these three spheres and the equal effects they have on the livability of a city (Roberts, 2000). Quality of life, attracting the creative class, provincial downloading and new urbanism all play a part in establishing integration and sustainability in a city. A city that solves problems holistically is able to realize the connections between departments, ecosystems, industries, clusters and citizens. When these principles are applied, the city will be able to learn, grow and become an attractive place for new and current firms to establish themselves in.

Poverty and the Downloaded Dilemma

In the 1990's, the province downloaded control and financing of social services, social housing and public health to municipalities. The costs of these services, funded by local tax payers, have resulted in an operating deficit of $30 million in Hamilton. The city needs to expand these services since it has the highest rate of poverty compared to other cities in the province. One in five Hamiltonians live in poverty with 26 percent of those people classified as the working poor (*CSD, 2006b*). This paper has demonstrated that poverty issues present a major challenge for the city in terms of attracting new business, creating a sustainable city and helping people in the community succeed.

The need to keep social services at a high quality has not allowed Hamilton to invest in economic development and makes the city vulnerable to economic downturns. According to the Centre for Community Study (2006), some answers to this problem include uploading social costs back to the province where they belong, since most other provinces and states fund these programs entirely. In addition, the city should pursue a new social cost pooling arrangement with the province and work with the federal government to acquire more financial assistance for services. Finally, a number of authors have proposed that some municipalities require more control over areas that are historically the domain of the provincial government. If Hamilton was

to work with the government to establish the City of Hamilton Act, similar to what has been done in Toronto, the city could pursue additional revenue streams that go beyond the property tax base (*CSD, 2006b*).

Another route to tackling the problem of poverty is through the Hamilton Round Table for Poverty Reduction (HRPR) which is a multi-stakeholder group whose aim is to eliminate poverty in the city. The roundtable must work at engaging business, government, NGO's, citizens and those affected by poverty to develop solutions. This initiative is currently underway and has made progress in achieving its goals. The reduction of poverty can improve the city's image, help citizens learn and grow, ensure that all children in the city have an opportunity to get an education and daily meals, and help to reduce crime. It is clear, that solving the poverty problem will be a great aid in creating a sustainable city and attracting new business. If the new businesses attracted to the city operate with triple bottom line philosophies, they would be more inclined to contribute to community initiatives which help reduce or prevent poverty in the future. Furthermore, the employees of these progressive companies will be encouraged to donate their time to local charities (Dudok van Heel, 2001). Local Business Improvement Areas (BIAs) and the Hamilton Chamber of Commerce have an important role to play in attracting business to the City and helping reducing poverty, as it is in their best interest.

Quality of Life and the Creative Class

One challenge that deserves attention is Hamilton's creative brain drain and its relation to quality of life and the creative class. The economic development policy identifies the downtown core and cultural clusters as areas to focus new development. This is important because they are emerging clusters which differ from the traditional manufacturing base that Hamilton has relied upon in the past (Hamilton Economic Development, 2005). Hamilton's well established clusters are important areas of development, but they generally require serviced land and infrastructure which is scarce and expensive. The strategies to attract a cultural and creative workforce differ greatly. Downtown core renewal, heritage building preservation, smart growth, inner urban area investment, space conversion, park and trail design and growth in the entertainment sector are amongst the list of strategies necessary to attract and retain a creative workforce (Florida, 2005).

Florida's research indicates that attracting talented and creative people can create economic growth through innovation, technology based industries and the creation of a bohemian atmosphere, which is associated with artists, entertainers and other traditional creative occupations. According to the Centre for Community Study (2004, p. 2),

To attract these individuals, cities are shifting their perspective on economic development. "Quality of life" as a holistic concept is regarded as more important than simply the availability of serviced land or competitive tax rates. Thus, issues of environmental sustainability, cultural vibrancy, and downtown renewal are not viewed as privileges of economic success, but as essential ingredients to long term economic prosperity.

Most of the general themes found in this paper resonate with the above statement. Sustainable development is no longer a "nice to have," it is a business decision motivated by financial interests and the need for community well being. Attracting the creative class also addresses the competition Hamilton faces with other GTA municipalities that have more serviced virgin land and fewer taxes.

In order to monitor its economic performance, Hamilton should complement the standard measures of transportation infrastructure and amount of developable lands with new indices that measure indirect elements of development (*CSD,* 2004). These indices include the bohemian index which measures the amount of creative and artistic employment, as well as indices that measure the amount of university educated citizens, the amount of immigrants and the amount of employment in the high tech industry (Florida, 2005). Traditionally, Hamilton has fared poorly on all these indices, especially when compared to GTA neighbors (*CSD,* 2004).

The city should focus on increasing quality of life, if it is to attract the creative class. The McMaster Innovation Park, downtown renewal plans, ERASE plan and bay front redevelopment form the beginnings of this strategy. The city also aims to re-develop and preserve its heritage buildings such as the Lister Block, in order to bring a historic and cultural character to the city. Hamilton's centuries of history are an advantage over neighboring municipalities. A good example of this type of urban renewal is the Imperial Cotton Centre for the Arts, a brownfield redevelopment of a former industrial space dedicated to developing the talent of new artists and showcasing their work. Hamilton should continue redevelopment efforts along Sherman Avenue to establish a creative arts cluster there (Frieburger, 2007).

The research also indicates that technology based jobs are necessary to increase Hamilton's retention of university graduates and increase its performance on technology based indicators. According to the Centre for Community Study (2004), Hamilton needs to attract more technical firms from the GTA to the urban core. The study conducted by O'Mara (1999) on the location of firms indicates that clusters are important because of their proximity to a talented workforce pool. Other factors such as distance from suppliers and customers were not salient factors in motivating firm location change, as they have been in the past, due mainly to telecommunication advances and globalization (O'Mara, 1999). In the near future, Hamilton

should work to attract this high-tech workforce pool more diligently in order to retain university graduates and attract firms who place an emphasis on close proximity to a talented work force.

Finally, promotion of local tourism and civic pride are important to attracting the creative class. More emphasis must be placed on Hamilton's natural features, biking and hiking trails, escarpment lands and park lands. The economic development policy is moving in these new directions; however, in the future, Hamilton must embrace concepts of sustainability, creativity and quality of life if it is to attract sustainable companies to the city.

New Urbanites, the Right Fit and Change

According to Brian McHattie (personal communication, March 12, 2007), the competition for companies shouldn't be over green space and serviceable land. Hamilton has very little green space and is already experiencing the pressures of sprawl. The evidence indicates that Hamilton may be pursuing companies that are not the proper fit for the city. It has been established that Hamilton has a limited ability to compete with GTA neighbors for green space developments and companies wishing to pay fewer taxes, so it may be necessary for Hamilton to re-orientate its strategy. One type of company to focus on is the new urbanite. These, "companies are attracted to urban cores with access to employee housing, good public transportation systems … the presence of urban amenities such as restaurants, shops and health clubs were also cited as attractions" (O'Mara, 1999, p. 380). O'Mara's research agrees with other research cited in this paper that location change was based more heavily on workforce quality and education potential, than financial incentives. Therefore, it is important for Hamilton to work on retaining its university and college educated workforce after graduation, especially for those in technical industries.

According to Peter Senge (2004), former director of the Center for Organizational Learning at the MIT Sloan School of Management, for change to occur in a community, the community must be committed to lifelong learning. Furthermore, a city, according to Berke (2002), cannot operate sustainably and achieve economic sustainability without a shared civic vision that transcends fragmentation and conflict. In order to avoid challenges to sustainable thinking Senge (2004) suggests a set of principles for creating learning communities.

The first is that a learning organization must embody new capabilities. These organizations are characterized by compassion, open dialogue and inclusion. Leadership skills are fostered in all participants, rather than looking to one or two people to define a vision. A bottom-up approach is necessary to embark on continuous learning; this aspect of a learning community involves a servant-leadership model from within. The servant-leader is committed to service of the community and the promotion of its well being.

Another important aspect of a learning organization deals with the issue of training. A short training session does not prepare one for informed implementation. Instead, people within organizations need opportunities to practice and grow as a team so that they can identify the systemic effects of their actions. Senge refers to this as combining the learning space with the work space. In these learning communities process and content cannot be separated, just as fragmented policies and strategies cannot be analyzed or fixed out of context. Understanding the context in which a process is applied can help lead to new breakthroughs. Civic structures can sometimes stifle development because of fragmentation and departmental competition.

In addition, learning is not always about acquiring new tools and techniques. Generally it involves changing the core of one's knowledge or belief. Many assume that once something is learned, it does not need to change and they refuse to learn new ways of thinking. Learning to question and change one's core beliefs is the kind of learning that needs to take place to build sustainable cities and attract sustainable business. Communities that can learn and grow are able to adapt to and overcome the obstacles that arise from emerging economies and social changes (Senge, 2004)

Integrating Strategies: A case study for holistic approaches to sustainability

Vision 2020 remains the cornerstone of Hamilton's sustainable initiatives. It embodies the principles of the triple bottom line and has identified areas which need improvement and continuous monitoring. Over the course of its development it has received considerable criticism, but it has also been the driving force behind many of Hamilton's sustainable initiatives which have been discussed throughout this document. This section discusses the possible evolution of the Vision into a framework for implementing sustainable planning and development. Two case studies are used to provide examples of how vision, partnerships and municipal restructuring can improve the sustainability and economic development of a city. The cities of Leicester, England and Portland, Oregon will aid in this exploration of strategies.

According to McMullan's interviews with city staff in 2002, the fact that Vision 2020 lacks community wide ownership is one of its major downfalls. As noted previously, the Vision is not well known amongst the general citizenry, nor does it always get incorporated into decision making. Only when citizens are engaged in a transparent and inclusive way, can the political and social will of the city be harnessed to improve its quality of life (Brewer & Hayllar, 2005).

One important suggestion for the modernization of the Vision is a citizen's advisory group which differs from attempts at citizen involvement in the past. The implementation must use bottom-up strategies to influence change at the citizen level. Informing citizens of the applicability of the Vision to daily life, is an example of such a strategy. Another good example

is the Your City, Your Future survey which gauges community opinion on a variety of topics including a healthy community (*City of Hamilton,* 2007). Furthermore, the Vision requires implementable strategies, priorities and timelines which complement the demonstration of the business case for sustainable development in the city. "Developing a vision backed by public and political consensus gives Hamilton the civic focus to identify and deal with barriers. Vision that does not enjoy public support will run into resistance when it comes to implementation." (F. Eisenberger, personal communication, Feb. 4, 2007).

Another problem for many cities is the inability of their sustainable measures to endure the short time lines of political office (Hoogma et. al., 2005). This may be due in part to the fact that sustainable issues are usually relegated to the planning department. Sustainability researches such as John Elkington (2004) and Bob Willard (2005), show evidence that sustainable mandates are only effective when applied across the entire corporation. Some North American cities have realized the potential for city wide sustainable strategies and have brought sustainability issues under one central coordinating body that is responsible directly to the city manager. One way to achieve this is to establish a Sustainability Office. The city of Portland, Oregon has established an office which is responsible for solid waste issues, a global warming action plan, energy conservation, renewable energy, green building, sustainable local agriculture and sustainable city government. The office is complimented by citizen and stakeholder advisory committees and an informative website (*City of Portland,* 2007). Although the City of Hamilton is undertaking many similar measures, it lacks a coordinated effort and occurs across departments such as economic development, planning and public works.

The city of Leicester, England was designated the UK's first environment city. Its goal was to pursue holistic and sustainable urban solutions including the reduction of congestion, traffic accidents, car use and air pollution. It also aimed to improve quality of life, improve social housing, reduce fossil fuel use, increase renewable energy use and use the city council's operations as an exemplar for resource use and waste reduction. The strategy employed was one of partnerships, participation, transparency and inclusion to identify common goals between all stakeholders. The Environment City initiative focused on urbanism, holism and an emphasis on solutions (Roberts, 2000). In the past Hamilton has focused on sub-urbanism, single issue strategies and an emphasis on problems, which is in opposition to the Leicester goals.

The Leicester strategy also involved the formation of a board of directors that ensured equal representation of city council, businesses and local community groups. The group formed an NGO to provide leadership for the board, raise funds for special projects and maintain a commitment to sustainability during times of political change (Roberts, 2000). This

arrangement is similar to the initiatives Hamilton is hoping to pursue and could become an example for Hamilton to follow. This also complements the Policy Proposal (Topalovic, 2006) which outlines specialist working groups, also implemented by the Leicester Trust. These groups bring together politicians, academics, business leaders and community groups in order to set visions for their area of specialization, engage the community and undertake projects that could be used to demonstrate success. Areas of specialization include the environment, economy, workforce, transportation and waste management, amongst others.

Examples of projects undertaken by the specialist working groups include road tolling studies, traffic calming, safe routes, a real time transit information system, air quality and pollution control measures, and the establishment of an energy advice centre for households and businesses. Participation methods to include all stakeholders in creating and advising on initiatives included workshops, questionnaires, public consultation on issues such as the city budget, a young people's council, task forces, and expert advice. Hamilton's Your City, Your Future Survey is an example of the types of methods employed in Leicester (Roberts, 2000).

In reviewing this model so far, Hamilton has many of the elements that the environment city has; however, one component Hamilton lacks is the central and unifying representative body. Hamilton requires a dynamic mix of institutions, policies and values to implement its Vision 2020. The example of Leicester provides a bottom-up model in which groups are empowered to lead and promote change. Past attempts in Hamilton have used top-down, government led initiatives which were not dynamic enough to handle the issues of sustainability (McMullan, 2002). The Leicester example takes a systems view of urban management which supports the idea that sustainable development cannot be advanced by modularizing and implementing isolated initiatives. Hamilton can use this example to resist attempts to compartmentalize issues of sustainability (Roberts, 2000; Senge, 2004).

Hamilton's establishment of an office of sustainable development should integrate the lessons learnt from Leicester and Portland. A systems or holistic view of sustainable management will aid the city in engaging all the stakeholders of the community. The office could respond to local needs, secure new funding for creative initiatives, build a shared vision for the community, raise awareness for sustainability, report on success and quantify the efficiencies and costs savings. The projects should have local value and appeal, while keeping in mind economic development goals. In addition, related offices such as the Office of Energy Initiatives' green procurement should be combined under the sustainability office. The city should also consider implementing the sustainability office as an NGO comprised of stakeholder

leaders, with a cross departmental focus, rather than a government led initiative. A proposed model for the Office of Sustainability can be found in Figure 1.
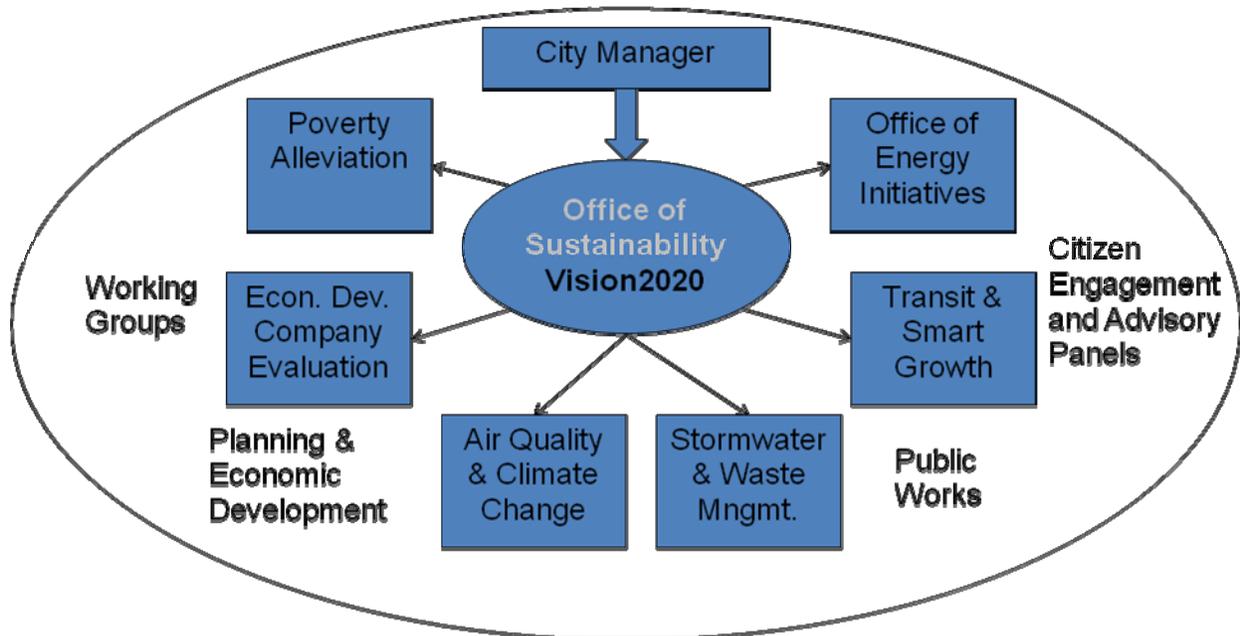
Figure 1 – Proposed Model for the Office of Sustainability

CONCLUSION

This study poses an important question regarding the City of Hamilton's future development: **What are the challenges in attracting sustainable business to Hamilton?** The investigation of this question resulted in three anticipated areas of study which include unforeseen challenges rooted in past civic decisions, physical aspects of the city and the state of world markets; external challenges including perceptions of the city such as reputation, economic factors, social issues and workforce issues; and political and community challenges which deal with the need for a strong, clear vision, the need for aggressive action, and the resolution of philosophical differences among key political and community members.

This analysis resulted in a variety of case study examples and policy recommendations which could be adopted by the city to ensure future success in attracting sustainable companies. Three broad categories summarize strategies for meeting the challenges faced by the City including leading by example; economic development and the business case; and integration, quality of life and new urbanism. Amongst the policy recommendations it was noted that green building, energy efficiency, climate change and alternative energy policies are important to attracting companies and remaining competitive with other municipalities. The case studies reviewed indicated that smart growth, poverty reduction, quality of life indicators, economic vision, choosing the right companies for Hamilton and the pursuit of public-private partnerships are key to successfully implementing sustainable strategies for future growth and development.

The key finding of this study is the need for integration and centralization of sustainability initiatives under an independent Office of Sustainability. Vision 2020, the cornerstone of this strategy, can unite the various departments in the City which are pursuing sustainability measures, if it incorporates the proper targets, indicators and stakeholder engagement strategies. The company evaluation process proposed as part of a Sustainable Corporate Initiatives (or TBL) Committee can be successfully implemented by a central coordinating body. Furthermore, this process to evaluate companies can also be used to evaluate the City of Hamilton's progress in achieving its sustainable mandate through Vision 2020, which has been identified as a key to attracting sustainable business to the City.

Key Questions Arising from the Analysis

This study raises a variety of questions which relate to the implementation of the recommendations. While many projects investigating the aspects of the City of Hamilton's

development are useful, in practice the recommendations may be difficult to implement and therefore, careful attention must be paid to practical solutions.

a. How do we move forward on sustainability when connecting issues emerge that are perceived as directed by Council as single issues? E.g. peak oil, climate change, downtown core, arts & heritage, waste, water & waste water, air quality, etc.? These issues are interrelated but sometimes viewed as independent from each other.
b. How could the Analytical Hierarchy Process (for company evaluation) be adapted for the purposes of the Vision 2020 renewal?
c. How would the Sustainable Corporate Initiatives (TBL) Committee be formed?
d. What prevents City Council from disregarding committee recommendations?
e. Who ultimately decides when Council and staff are divided on issues of sustainability?
f. How can sustainable alternative energy incentive programs be implemented to provide motivation for residents and business to adopt solar, wind, geothermal and green building initiatives?
g. Could a recession or economic downturn affect the growing trend towards greater green procurement amongst citizens and staff?
h. How can Vision 2020 be renewed and promoted? Does it require a centralized office, additional staff, the cooperation of all City departments, the consolidation of separate sustainability measures and other areas?

The intent of this research is to provide City staff and Council with a starting point to attract business to the City in a sustainable and profitable manner. While the practical implementation of this paper's recommendations may seem far reaching, upon further examination many of the required initiatives for sustainable corporate development exist in various stages of development. Coordinating these efforts may be a daunting task; however, their existence is indication that the possibility for implementing successful sustainable initiatives exists.

Hamilton: the Sustainable City is not only a possibility; it is a reality that will make Hamilton an economic, environmental and social success story. To accomplish this, all City stakeholders must unite in their efforts to contribute to the improvement of their community.

REFERENCES

About Remediation (2007). Sustainable Communities: Redeveloping sites. Retrieved Feb/25, 2007, from http://www.aboutremediation.com/sustainableCommunities/sc_redevelopingSites.asp

Anthes, G. H. (2005, September 19). Beyond ZIP codes. *Computerworld,* 56-61.

Arnold, S. (2005, Feburary 15, 2005). Housing, Jobs are still Acute Issues for City; Local Economy and high Occupancy at Emergency Shelters Demand Attention, says the 2004 report on vision 2020. *Hamilton Spectator,* pp. A08.

Banting, Doug, et. al. (2008). *Environmental Benefits and Costs of Green Roof Technology for the City of Toronto*, City of Toronto, Retrieved June 10, 2008 from http://www.toronto.ca/greenroofs/pdf/executivesummary.pdf

Begg, I. (2002). 'Investibility': The key to competitive regions and cities? *Regional Studies, 36*(2), 187-200.

Berke, P. R. (2002). Does sustainable development offer a new direction for planning? Challenges for the twenty-first century. *Journal of Planning Literature, 17*(1), 21-36.

Bonte, M. (2004). Sustainable new economic centers in European metropolitan regions: A stakeholder's perspective. *European Planning Studies, 12*(5), 704-720.

Brewer, B., & Hayllar, M. R. (2005). Building public trust through public–private partnerships. *International Review of Administrative Sciences, 71*(3), 475-492.

Brown, D. (2007, March 9). A quick attention grabber. *Hamilton Spectator,* pp. A13.

Building a Strong Foundation (2004). Retrieved 11/26, 2006, from http://www.myhamilton.ca/myhamilton/CityandGovernment/ProjectsInitiatives/V2020/BuildingAStrongFoundation/

Center for Community Study (CSD), (2006). *A city divided: Spatial trends on Hamilton's political landscape*. Hamilton: Centre For Community Study.

Center for Community Study (CSD), (2006b). *Downloaded dilemma: Background report for the social services downloading steering committee*. Hamilton: Centre for Community Study.

Center for Community Study (CSD), (2004). *Hamilton and the Creative Class*. Hamilton: Centre for Community Study.

Cervero, R & Duncan, M. (2002). Transit's Value-Added Effects: Light and Commuter Rail Services and Commercial Land Values. *Transportation Research Record*, 1805, 8-15.

City of Hamilton (2008). *Transportation Master Plan*. Hamilton: Public Works – Strategic Planning Division.

City of Hamilton (2007). *Your city, your future: Survey Results.* Hamilton: City of Hamilton. Retrieved 2007, from http://www.myhamilton.ca/NR/rdonlyres/FF5AC19D-C790-47CC-B0D3-D6BB7FBB22CB/0/SurveyResults2007.pdf

City of Hamilton (2005). *Environmental remediation and site enhancement.* Hamilton: City of Hamilton Planning & Economic Development.

City of Hamilton (2004). *Vision 2020 Indicator Report.* Retrieved 11/26, 2006, from http://www.myhamilton.ca/myhamilton/CityandGovernment/ProjectsInitiatives/V2020/IndicatorsMeasuringProgress/Annual+Sustainability+Indicators+Report.htm

City of Portland (2007). Office of sustainable development. Retrieved March/18, 2007, from http://www.portlandonline.com/osd/

City of Toronto (2008). Green Roof Pilot Program Background. Retrieved June/10, 2008, from: http://www.toronto.ca/greenroofs/incentiveprogram.htm

Clean Field Energy Corporation (2005). Products. Retrieved 11/15, 2006, from http://www.cleanfieldenergy.com/wind_competitive.php

Commission for Environmental Cooperation. (2007). *Environment, economy and trade.* Retrieved March/18, 2007, from http://www.cec.org/programs_projects/trade_environ_econ/nagpi/index.cfm?varlan=english

Corporate Social Responsibility. (2005). Retrieved 10/01, 2006, from http://strategis.ic.gc.ca/epic/internet/incsr-rse.nsf/en/rs00107e.html

Danyluk, V. (2003). Major cities in the 21 snot century. *Canadian issues, 25*(Feburary)

Dekel, G. P. (1997). The cost of industrial sprawl: A boomerang effect. *Environments, 25*(1), 29.

Dewar, M. (2006). Selling tax-reverted land: Lessons from cleveland and detroit. *Journal of the American Planning Association, 72*(2), 167.

Arcelor-Mittal Dofaso (2003). Dofasco market sector leader on Dow Jones sustainability world index. (2003). Retrieved Feb/25, 2007, from http://www.dofasco.ca/bins/content_page.asp?cid=9799-9800

Doloreux, D., & Gubeli, M. H. (2005). An empirical study of university spin-off development. *European Journal of Innovation Management, 8*(3), 269-280.

Dudok van Heel, O. (2001). *Buried treasure: Uncovering the business case for corporate sustainability.* London: SustainAbility.

Eisenberger, F. (2006). *Fred Eisenberger's plan to put our community back on track.* Retrieved 11/15, 2006, from http://www.fredformayor.ca/

Elkington, J. (1998). *Cannibals with forks: The triple bottom line of 21st century business.* London: New Society Publishers.

Elkington, J. (2004). Enter the triple bottom line. In A. Henriques, & J. Richardson (Eds.), *The triple bottom line: Does it all add up?* (pp. 1-16). London: Earthscan.

Environment Canada (2004). *Environment Canada's subject classification scheme: Glossary.* Retrieved Feb/24, 2007, from http://www.ec.gc.ca/glossary_e.html#S

Faulkner, R. (2005, Jun. 2). Suburbs snatch the core's jobs. *Hamilton Spectator.*

Federation of Canadian Municipalities [FCM], (2005a). *Quality of life in Canadian Municipalities: Dynamic Societies and Social Change.* No. 2. Ottawa: Federation of Canadian Municipalities. From http://www.fcm.ca/english/qol/qolfeb.pdf

Federation of Canadian Municipalities [FCM], (2005b). *Quality of life in Canadian Municipalities: Growth, the Economy and the Urban Environment* (2005). No. 3. Ottawa: Federation of Canadian Municipalities. From http://www.fcm.ca/english/qol/may112005.pdf

Florida, R. (2005). *Cities and the creative class.* Oxford: Routledge.

Fragomeni, C. (2007, August 16). Province Gives $30M to Clean Up Randle Reef. *Hamilton Spectator.*

Fragomeni, C., & Vallance-Jones, F. (2007, March 16). Nanticoke tops greenhouse gas list. *Hamilton Spectator.*

Freeman, B. (2001). *Hamilton: A people's history.* Toronto: James Lorimer & Company Ltd.

Frieburger, J. (2007). *The Imperial Cotton Center for the Arts.* Retrieved March/05, 2007, from http://www.imperialcottoncentre.com/history1.html.

Gladwell, M. (2003). *The Tipping Point: How Little Things Can Make a Big Difference.* Broadview Heights, Ohio: Wheeler Publishing.

Gleason, P. (2006). Learning from green roofs. *E: the Environmental Magazine, 17*(6), 14.

Hall, T., & Hubbard, P. (1996). The entrepreneurial city: New urban politics, new urban geographies? *Progress in Human Geography, 1996, 20, 2, June, 20*(2), 153-174.

Ham, C., & Hill, M. (1993a). *Bureaucrats in the policy process. The policy process in the modern capitalist state* (2nd ed., pp. 134-149). New York: Harvester-Wheatsheaf.

Hamilton Community Energy (2004). *HCE in the community.* Retrieved Feb/24, 2007 http://www.hamiltonce.com/html/static/current_projects.shtml

Hamilton Economic Development (2005a). Hamilton: City of Hamilton Planning & Economic Development.

Hamilton Economic Development (2005b). *Invest in Hamilton: Economic Development Review.* Hamilton: City of Hamilton Economic Development.

Handy, Susan. (2005). Smart Growth and the Transportation – Land Use Connection: What does the Research Tell Us?. *International Regional Science Review*, 28(2), 146-167.

Hansen, S., Ban, C., & Huggins, L. (2003). Explaining the "brain drain" from older industrial cities: The pittsburgh region. *Economic development quarterly, 17*(2), 132.

Hawken, P., Lovins, A., & Lovins, L. H. (1999). *Natural capitalism*. New York: Little, Brown & Company.

Hay, R. (2005). Becoming eco synchronous, part 1. The root causes of our unsustainable way of Life. *Sustainable Development, 13*, 311-325.

Hess, D.B. & Almeida, T.M. (2007). *Impact of Proximity to Light Rail Transit on Station-Area Property Values in Buffalo.* Urban Studies, 44(5).

Hill, C. (2006). *Green Fleet Implementation Plan*. Hamilton: City of Hamilton. From http://www.myhamilton.ca/NR/rdonlyres/4BF1A003-FAFF-4D3F-9DAF-011E3835EEA1/0/GreenFleetImplementationPlanAug2106.pdf

Hoogma, R., Weber, M. & Elzen, B. (2005). Integrated Long-Term Strategies to Induce Regime Shifts towards Sustainability: The Approach of Strategic Niche Management. In M. Weber & J. Hemmelskamp (Eds.), *Towards Environmental Innovation Systems* Heidelberg: Springer Berlin.

Krantzberg, G., & de Boer, C. (2006). *A valuation of ecological services in the great lakes basin ecosystem to sustain healthy communities and a dynamic economy*. Hamilton: McMaster University.

Lang, A. (2007). But is it for real? The British Columbia citizens' assembly as a model of state-sponsored citizen empowerment. *Politics & Society, 35*(1), 35-70.

Lindblom, C. & Woodhouse, J. (1993). *The Policy Making Process: More Democracy?* Toronto: Prentice Hall.

Loorbach, D. & Romans, J. (2006). Managing Transitions for Sustainable Development. In X. Olsthoorn & A.J. Wieczorek (Eds.), *Understanding Industrial Transformation*. Maastricht, The Netherlands: Springer Netherlands.

Macintyre, N. (2007, March 6). Giant geyser floated as way to market city. *Hamilton Spectator.*

MAH [Ministry of Municipal Affairs and Housing], (2007). MAH Land Use Planning. Retrieved March/05, 2007, from http://www.mah.gov.on.ca/userfiles/HTML/nts_1_25709_1.html

McClean, D. (2005). *Friends of the red hill valley - the expressway, democracy?* Retrieved 11/28, 2006, from http://www.hwcn.org/~forhv/expressway/democracy.htm

McGregor, S. (2005). Sustainable consumer empowerment through critical consumer education: A typology of consumer education approaches. *International Journal of Consumer Studies, 29*(5), 437-447.

McMullan, C. A. (2002). *A qualitative evaluation of healthy and sustainable community initiatives in Hamilton and Sudbury, Ontario.* ETD Collection for McMaster University. *Paper AAINQ80785.*

Milne, M. J., Kearins, K., & Walton, S. (2006). Creating adventures in wonderland: The journey metaphor and environmental sustainability. *Organization, 13*(6), 801-839.

Moore, J. L. (1996, An introduction to what is stopping sustainability, part three (city of vancouver's report clouds of change). *New city magazine, 17*(1) 24.

Moore, J. L. (1995, Barriers to sustainability. *New city magazine, 16*(3/4) 33.

Norman, W., & MacDonald, C. (2004). Getting to the bottom of "Triple bottom line". *Business Ethics Quarterly, 14*(2), 243 – 263.

O'Mara, M. A. (1999). Strategic drivers of location decisions for information-age companies. *Journal of Real Estate Research, 17*(3), 365-386.

Partington, David (1996). The Project Management of Organizational Change. *International Journal of Project Management,* 14, (1), 13-21

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic Development Quarterly, 14*(1), 15-34.

Readman, J. (2007). *West Harbour Recreation Master Plan.* City of Hamilton: Retrieved July 25, 2008 from:
http://www.myhamilton.ca/myhamilton/CityandGovernment/CityDepartments/PublicWorks/CapitalPlanning/StrategicPlanning/StrategicEnvironmentalPlanningProjects/Waterfront+Master+Plan.htm

Reed, P. A. (2003). A paradigm shift: Biomimicry: Biomimicry is a new way of linking the human-made world to the natural world. *The Technology Teacher, 63*(4), 23(5)-28.

Reitano, J. (2006). *Police resources in canada.* Ottawa: Minister of Industry.

Roberts, I. (2000). Leicester environment city: Learning how to make local agenda 21, partnerships and participation deliver. *Environment & Urbanization, 12*(2), 9-26.

Rogozinski, E. (2004). Five ways to encourage green building. *Alternatives journal, 30*(5), 27.

Senge, P. (2004). Creating communities. *Executive Excellence, 21*(9), 4-5.

Short, J. R., Benton, L. M., & Luce, W. B. (1993). Reconstructing the image of an industrial city. *Annals of the Association of American Geographers, 83*, 207-224.

Simpson, R. J. (2003). *Completing the Redhill Creek Expressway - Economic Development Implications.* Toronto: Hemson Consulting Ltd.

Skydragon Centre *(2006). Skydragon - About.* Retrieved Feb/25, 2007.
http://www.skydragon.org/html/about.html

Smith, Garry J., Scott, Jennifer (2006). *Living Cities: Government and Sustainability in Australia.* Kenthurst, NSW, Australia: Rosenberg Publishing.

Spiller, R. (2000). Ethical business and investment: A model for business and society. *Journal of Business Ethics, 27.*

Topalovic, P. (2006). *Attracting sustainable business to Hamilton policy proposal.* Hamilton: McMaster University.

Tschopp, D. J. (2005). Corporate social responsibility: A comparison between the United States and the European Union. *Corporate Social Responsibility and Environment Management, 12*, 55-59.

Vallance-Jones, F. (2001). *Special report: Lament for downtown.* Hamilton: Hamilton Spectator. Retrieved Feb. 27, 2007, from http://www.hamiltonspectator.com/NASApp/cs/ContentServer?pagename=hamilton/Render&c=Page&cid=1021025161885

US Green Building Council. (2003). *Building momentum: National trends and prospects for high performance green buildings.* Washington: US Green Building Council.

Van Harten, P. (2005, Nov. 25, 2005). 'Culture of negativity' fueled maple leaf pullback. *Hamilton Spectator,* pp. A08.

Van Harten, P. (2006, May 17, 2006). Mayor goes to queen's park again, seeking millions for social services. *Hamilton Spectator,* pp. A01.

VTPI. (2008). *TDM Encyclopedia: Transportation Costs & Benefits.* Victoria Transportation Policy Institute. Retrieved 07/20, 2008 from http://www.vtpi.org/tdm/tdm66.htm

Ward, S. V. (1998). *Selling places: The marketing and promotion of towns and cities, 1850-2000.* London; New York, NY: E & FN Spon; Routledge.

Willard, B. (2005). *The next sustainability wave: Building boardroom buy-in.* Gabriola Island, BC: New Society Publishers.

Brundtland Commission (World commission on environment and development). *Our Common Future* (1987). Oxford: Oxford University Press.

Wyman, M. (2007). *Turning the ship: Environmental transformation of the US economy - going green, buying green: The power of local government dollars.* Retrieved March/18, 2007, from http://www.turningtheship.com/blog.html

Zittel, Werner, Shindler, Yorg (2007). *Crude Oil: The Supply Outlook.* Ottobrunn, Germany: Energy Watch Group.

APPENDIX A: ANALYTIC HIERARCHY PROCESS

The decision tool being proposed here is the Analytic Hierarchy Process (AHP) developed by Tom Saaty. In the first phase a graphical hierarchy is developed with the overall node representing the decision in question, which in this case is the utility of a company for Hamilton. The overall goal is broken down into sub categories which help group the indicators that will be used to evaluate the company. The overall and sub categories are then assigned weightings with respect to each other. This is done using decision matrices and ranking each measure against each other measure in a particular category. The ranking is described using a number system, where 1 represents equal importance between two measures and 9 represents an highly dominant importance of one measure over another. Once the priorities are determined, each indicator can be compared for a particular company (Saaty, 1994).

See appendix E for an example of this evaluation tool in practice. The example includes a comparison between an ideal company and a non-ideal one. There will be an ideal or model company chosen for each cluster being considered.

APPENDIX B: HIERARCHY OF MEASURES AND SUB MEASURES

Many of the indicators that are suggested here have come from the Vision 2020 policy itself and from a variety of other sources including research conducted by the United Nations Environment Program (Dudok van Heel, O., 2001), the Dow Jones Sustainability Index (*Dow Jones Sustainability Index,* 2006), The GRI G3 Sustainability Guidelines (*Sustainability Reporting Guidelines G3 version for public comment,* 2006) , the work of John Elkington (2004), the Domini Social Index (*The Domini 400 Social Index,* 2006) and the work of other authors already mentioned in this paper. Primarily, these indicators were adapted from the Vision 2020 indicators and the G3 Sustainability Indicators. It is a suggested list which needs to be investigated and defined further, but will act well as a starting point for future initiatives.

1. **Economic Development**
   a. Economic Performance
      i. Economic performance, value, revenue, community investments
      ii. Position Hamilton as a regionally competitive centre of economic growth
   b. Employee Benefits
      i. Help retain a skilled, innovative and diverse workforce
      ii. Entry level wage compared to local minimum wage
      iii. Procedures for local hiring and use of locally based suppliers
   c. Customer focus, brand value and reputation
   d. Company's fit within existing clusters

2. **Environmental Impact**
   a. Impact to surrounding area
      i. Green house gasses produced
      ii. Amount of non-organic water contaminants produced and water consumption required
      iii. Energy consumption broken down by primary energy source and use of policies to reduce energy consumption.
      iv. Amount of waste produced and past waste management policies
      v. Amount of motorized transport required
   b. Environmental Process and Product Focus – Eco-efficiency
      i. Ability to introduce environmentally superior products and services
      ii. Ability to introduce new processes that minimize impact
      iii. Use of the 3R's – amounts of materials reduced, reused and recycled
      iv. Life Cycle performance of its products and services – its environmental footprint from production to disposal
   c. Land use in urban area
      i. Fragmentation to areas and corridors
      ii. Use of brownfields
      iii. Area of habitats protected or restored
      iv. Impact of required infrastructure
      v. Impact on Downtown revitalization

3. **Social and Community Dimensions**
   a. Promotion of employee health and human rights
      i. Incidents of discrimination, sweatshop use or child labour
      ii. Freedom of association and right to organize
      iii. Procedures for improving health and safety in the workplace and in the home
      iv. Use of suppliers or companies that have a history of infringements regarding items (i) and (ii).
   b. Community Well Being and Capacity Building
      i. Practices for assessing and managing the impacts of operation on communities
      ii. Participation in public policy development and lobbying – does the company practice what it preaches
      iii. Investment of money, employee volunteering and resources in socio-economic development projects
      iv. Investment in local Arts and Heritage projects
   c. Partnerships with other industries and the education sector
      i. Ability to involve all stakeholders not just shareholders and the level and quality of their involvement
      ii. Investment in education and partnerships with learning institutions
      iii. Hiring local staff, using local suppliers
      iv. Improving local safety and security

4. **Business Philosophy and Governance**
   a. Ethics, Values and Principles:
      i. The scope of a firm's ethical values and business principles
      ii. Publicized examples of ethical decisions
      iii. Incidents of and fines for non-compliance for certain regulations (environmental or social)
      iv. Procedures for adhering to laws, standards and codes related to marketing communications (advertising, promotion, sponsorship)
   b. Accountability and Transparency
      i. Quality and Quantity of its external reporting, both print and web-based
      ii. The quality of underlying systems in place to measure and disclose its environmental, social and economic performance
      iii. Total value of contributions to political parties or related institutions
   c. Triple Bottom Line Commitment
      i. Companies rating or score in a published objective CSR index, ie. Dow Jones Sustainability Index, Domini Social Index or use of GRI reporting)
      ii. Company's subjective rating based on references to its overall positioning across sustainability issues

APPENDIX C: THE COMPANY EVALUATION PROCESS

Comparison between the TBL Evaluation Tool for the GRIDS process and the newly proposed Company Evaluation Tool

The TBL Evaluation Tool has been designed to evaluate a set of different alternative developments for a given project. The Company Evaluation Tool using AHP evaluates a particular company and their economic, environmental, social and ethical utility to the Hamilton community. This tool is intended to evaluate companies who the city wishes to approach in order to pursue a partnership or establish a relationship to further the development of established or emerging clusters. The process is a first phase fact finding tool that will go hand in hand with economic development strategies. It would be completed much more quickly and in a less detailed fashion than what will occur in the GRIDS process. It can also act to screen out companies who do not meet the needs of the community. The results can be used at council meetings to aid and guide discussion on a particular company.

Finally, the AHP process differs from the TBL evaluation in the use of weights and hierarchies. These components are vital for a quick information gathering process and the identification of the needs in the community.

APPENDIX D: BUILDING PERMIT AND TAX DATA

Source: City of Hamilton Building and Licensing Division
City of Hamilton Economic Development Office

The following two tables show the increase in building permits from 2000 – 2006 (table 1) and a trend in lower tax rates over the same period (table 2). The lower tax rates apply to areas within the boundaries of the former city of Hamilton as this encourages brownfield development and discourages sprawl.

Building Permits (in millions of dollars)					
Overall Value of Construction Trends in city of Hamilton					
	2002	2003	2004	2005	2006
Residential	352.8	262.2	380.3	375.1	407.3
Commercial	107.7	58.9	75.3	79.1	108.7
Industrial	50.4	87.3	70	72.5	72.3
Institutional	150.5	252.6	74.5	106.7	85.8
Misc.	3	3.4	4.1	7.5	8.4
Total	**664.3**	**664.4**	**595.2**	**640.9**	**682.5**

Taxation Year	Business Tax Rates		
	Commercial	Industrial	Large Industrial
2000	7.5	10.93	11.38
2001	6.27	8.84	10.52
2002	5.97	8.05	9.44
2003	5.32	7.06	7.88
2004	4.83	6.74	7.55
2005	4.79	6.6	7.41
2006	4.47	6.26	7.03
% Change	**-40%**	**-43%**	**-38%**

APPENDIX E: ANALYTICAL HIERARCHY PROCESS EXAMPLE

Section A: Organization Chart of Indicator Categories (adapted from Appendix B)
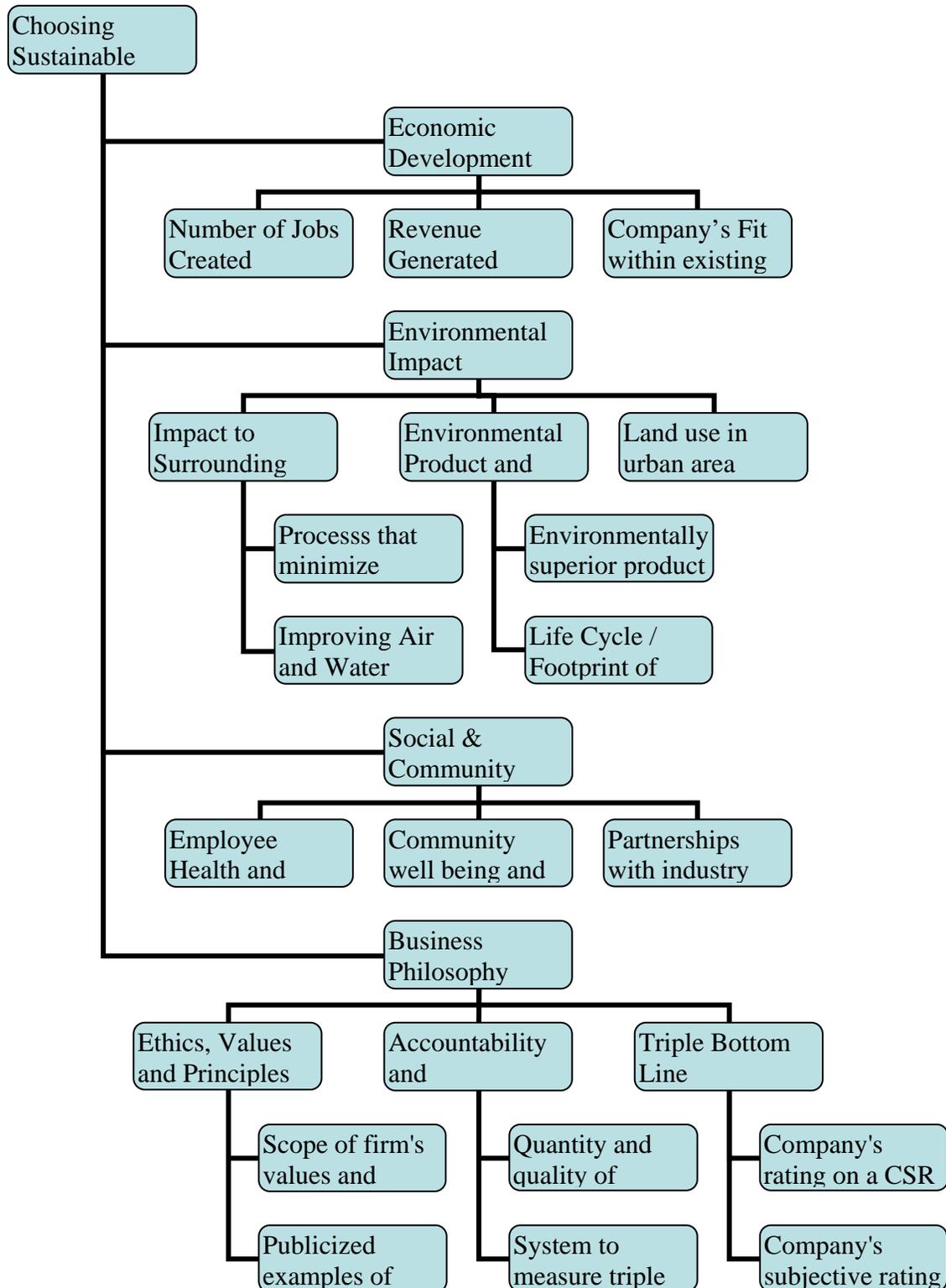
Section B: Assigning Weights for each Measure

Overall Measures

	Ecomomic	Environmental	Social	Philosophy	Sum	Sum/total
Economic	1	0.555555556	1.3	3	5.856	0.310
Environmental	1.8	1	2.5	1	6.300	0.333
Social	0.769230769	0.4	1	2	4.169	0.220
Philosophy	0.333333333	1	0.25	1	2.583	0.137
				Total	18.908	

Sub Measures

Economic Development

	Jobs	Revenue	Fit	Sum	Sum/total	Global
Jobs	1	0.25	3	4.250	0.305	0.095
Revenue	4	1	0.333333	5.333	0.383	0.119
Fit	0.333333333	3	1	4.333	0.311	0.096
				13.917		

Environmental Impact

	Impact	Prod. & Proc.	Land Use	Sum	Sum/total	Global
Impact	1	2	3	6.000	0.552	0.184
Product & Process	0.5	1	1.2	2.700	0.248	0.083
Land Use	0.333333333	0.833333333	1	2.167	0.199	0.066
				10.867		

Social and Community

	Health	Community	Partner.	Sum	Sum/total	Global
Employee Health	1	3	4	8.000	0.575	0.127
Community	0.333333333	1	3	4.333	0.311	0.069
Partnerships	0.25	0.333333333	1	1.583	0.114	0.025
				13.917		

Business Philosophy

	Ethics	Accountability	TBL	Sum	Sum/total	Global
Ethics & Values	1	0.5	0.25	1.750	0.134	0.018
Accountability	2	1	0.333333	3.333	0.255	0.035
Triple Bottom Line	4	3	1	8.000	0.611	0.084
				13.083		

Detailed Measures

Environment: Impact to Surrounding Area

	Min. Impact	AQ/WQ	Sum	Sum/total	Global
Minimize Impact	1	4	5.00	0.800	0.147
Air/Water Quality	0.25	1	1.25	0.200	0.037
			6.25		

Environment: Product and Process Focus

	Min. Impact	AQ/WQ	Sum	Sum/total	Global
Manufacture	1	3	4.00	0.750	0.062
Life Cycle	0.333333333	1	1.33	0.250	0.021
			5.33		

Business Philosophy: Ethics and Values

	Scope	Examples	Sum	Sum/total	Global
Scope of Values	1	0.2	1.20	0.167	0.003
Examples	5	1	6.00	0.833	0.015
			7.20		

Business Philosophy: Accountability and Transparency

	Reporting	Performance	Sum	Sum/total	Global
Reporting Quality	1	1	2.00	0.500	0.017
Performance System	1	1	2.00	0.500	0.017
			4.00		

Business Philosophy: Triple Bottom Line Commitment

	Reporting	Performance	Sum	Sum/total	Global
Index Rating	1	0.5	1.50	0.333	0.028
Subjective Rating	2	1	3.00	0.667	0.056
			4.50		

Section C: Assigning Values to each Weighted Measure

Measures	Global Priority	Decision Priority	Ideal Company A	Decision Priority	Non-Ideal Company B
Economic Impact					
Jobs Created	0.095	0.200	0.019	0.800	0.076
Revenue Generated	0.119	0.750	0.089	0.250	0.030
Fit within existing clusters	0.096	0.800	0.077	0.200	0.019
Environmental Impact					
Impact to Surroundings					
Processes to Minimize Impact	0.147	0.667	0.098	0.333	0.049
Air/Water Quality	0.037	0.500	0.018	0.500	0.018
Product & Process Foucs					
Eco-friendly Manufacture	0.062	0.800	0.050	0.200	0.012
Life Cycle and Footprint	0.021	0.667	0.014	0.333	0.007
Urban Land Use	0.066	0.833	0.055	0.167	0.011
Social and Community					
Employee Health	0.127	0.833	0.106	0.167	0.021
Community well being	0.069	0.857	0.059	0.143	0.010
Partnerships	0.025	0.500	0.013	0.500	0.013
Business Philosophy					
Ethics & Values					
Scope of ethics & values	0.003	0.875	0.003	0.125	0.000
Examples of ethical actions	0.015	0.875	0.013	0.125	0.002
Accountability					
Reporting Quality	0.017	0.667	0.012	0.333	0.006
Performance System exists	0.017	0.857	0.015	0.143	0.002
Triple Bottom Line					
Index Rating on CSR	0.028	0.500	0.014	0.500	0.014
Subjective Rating	0.056	0.889	0.050	0.111	0.006
Total Score			**0.703**		**0.297**

Decision Priorities for Company A vs. Company B

1. Economic Impacts

Jobs Created

	Company A	Company B	Sum	Sum/total
Company A	1	0.25	1.25	0.200
Company B	4	1	5.00	0.800
			6.25	

Revenue Generated

	Company A	Company B	Sum	Sum/total
Company A	1	3	4.00	0.750
Company B	0.3333333	1	1.33	0.250
			5.33	

Fit within Existing Clusters

	Company A	Company B	Sum	Sum/total
Company A	1	4	5.00	0.800
Company B	0.25	1	1.25	0.200
			6.25	

2. Environmental Impacts

Processes to Minimize Impact

	Company A	Company B	Sum	Sum/total
Company A	1	2	3.00	0.667
Company B	0.5	1	1.50	0.333
			4.50	

Air/Water Quality

	Company A	Company B	Sum	Sum/total
Company A	1	1	2.00	0.500
Company B	1	1	2.00	0.500
			4.00	

Eco-friendly Manufacture

	Company A	Company B	Sum	Sum/total
Company A	1	4	5.00	0.800
Company B	0.25	1	1.25	0.200
			6.25	

Life Cycle and Footprint

	Company A	Company B	Sum	Sum/total
Company A	1	2	3.00	0.667
Company B	0.5	1	1.50	0.333
			4.50	

Urban Land Use

	Company A	Company B	Sum	Sum/total
Company A	1	5	6.00	0.833
Company B	0.2	1	1.20	0.167
			7.20	

3. Social and Community

Employee Health

	Company A	Company B	Sum	Sum/total
Company A	1	5	6.00	0.833
Company B	0.2	1	1.20	0.167
			7.20	

Community well being

	Company A	Company B	Sum	Sum/total
Company A	1	6	7.00	0.857
Company B	0.1666667	1	1.17	0.143
			8.17	

Partnerships

	Company A	Company B	Sum	Sum/total
Company A	1	1	2.00	0.500
Company B	1	1	2.00	0.500
			4.00	

4. Business Philosophy

Scope of ethics & values

	Company A	Company B	Sum	Sum/total
Company A	1	7	8.00	0.875
Company B	0.1428571	1	1.14	0.125
			9.14	

Examples of ethical actions

	Company A	Company B	Sum	Sum/total
Company A	1	7	8.00	0.875
Company B	0.1428571	1	1.14	0.125
			9.14	

Reporting Quality

	Company A	Company B	Sum	Sum/total
Company A	1	2	3.00	0.667
Company B	0.5	1	1.50	0.333
			4.50	

Performance System exists

	Company A	Company B	Sum	Sum/total
Company A	1	6	7.00	0.857
Company B	0.1666667	1	1.17	0.143
			8.17	

Index Rating on CSR

	Company A	Company B	Sum	Sum/total
Company A	1	1	2.00	0.500
Company B	1	1	2.00	0.500
			4.00	

Subjective Rating

	Company A	Company B	Sum	Sum/total
Company A	1	8	9.00	0.889
Company B	0.125	1	1.13	0.111
			10.13	

APPENDIX F: LIGHT RAIL TRANSIT AND ITS EFFECT ON LAND VALUES IN NORTH AMERICAN CITIES

Rail System	Property	Result – Effect on Land Value
Dallas Area Rapid Transit (DART) (Dallas, Texas)	Assessed Values	• Property values increased by 32% near stations while properties further from the station only increased by 20% (Weinstein & Clower, 2002).
Eastside MAX (Portland, Oregon)	Sales Prices and Assessed Values	• Average house values increase at a faster rate closer to stations (Dueker & Bianco, 1999). • Starting at 100 m, property values decreased by $32.00 per meter further from the station (Chen et al., 1998). • Property value increased $76.00 for every 100 feet closer to stations (Lewis-Workman & Brod, 1997).
Metro (Washington, DC)	Apartment Rents and Land values	• Every thousand feet further from a station, the price per square foot of a commercial property decreases $2.30 (FTA, 2000) • Rends decreased 2.5% every 150 m further from the station (Benjamin & Sirmins, 1996).
MetroLink (St. Louis, Missouri)	Sales Prices	• Property values increased 32% ($140 every 10 feet closer to the station beginning at 1500 feet) (Garret, 2004).
San Diego Trolley (San Diego, California)	Sales Prices	• 10% - 17% increase in value for multi-family homes (Cervero & Duncan, 2002). • Property value increased $272 every 100 m closer to the station (Landis et al, 1995).
Santa Clara County LRT (Santa Clara, California)	Commercial Land values	• Within 0.5 Km from a station office space sold for 2 to 5 cents more per square foot than other areas. • Office space sold within 0.5 Km of a station was $5.00 more per square foot in revenue than other areas (Weinberger, 2001, 2000; Cambridge Systematics, 1999).
Westside Max (Portland, Oregon)	Residential land values	• Value of land located nearer to stations rise with decreasing distance; however, land values increase with distance from tracks in between stations (Knaap et al., 1996).

(Hess & Almeida, 2006).

APPENDIX G: ECONOMIC, SOCIAL AND ENVIRONMENTAL EFFECTS OF LIGHT RAIL TRANSIT

Health and Environment

Light Rail Transit

Developed within the appropriate policy frameworks and land use planning strategies

Development

Can Lead To

Increased Accessibility

LRT increases public access to employment areas, residential properties, commercial districts and municipal services, increasing the connectivity and vibrancy of urban areas.

Smart Growth

Light rail development can help achieve smart growth principles by reducing urban sprawl, promoting intensification and influencing development that better serves the economic, environmental and social needs of communities.

Resulting In

Increased Land Values

Greater access can make station areas lucrative and valuable places to do business; stimulating economic development. Proximity to local and inter-regional transit is also an important factor in attracting residents to areas along the corridor.

Transit Oriented Development

LRT is a key component to stimulate mixed-use, higher density communities within walking distance of a transit stop making it convenient to travel to a multitude of destinations by foot, bike or by public transit instead of by car.

Municipal Benefit

Increased Property Taxes

High value, high density, mixed use land parcels can produce higher property taxes which help to pay for the capital and operating costs of the system.

Health and Environment

LRT paired with complementary land use policies can decrease auto use, reduce congestion, contribute to clean air and encourage healthier lifestyles, while decreasing noise pollution.