

Environmental Improvement Zones (EIZ)

A Guide to environmental issues in Winnipeg Neighbourhoods

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1. Introduction

Modeled on the successful Winnipeg Housing Improvement Zones and other experiences from around the world, Environmental Improvement Zones (EIZs) are an emerging framework which could enable Winnipeg neighbourhoods to develop action plans to improve the local environment. These plans would build upon the framework of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* and enable a partnership between multiple levels of government and city residents in achieving the second half of the vision it embraces:

Winnipeg will become a model for community-based programming by providing citizens with educational programs, environmental outreach services and opportunities to participate in innovative environmental programs. Communities will develop local plans and work toward specific targets. Communities will be rewarded for their efforts to save energy, protect natural areas, dramatically reduce the use of pesticides and develop active transportation networks. Neighborhoods will develop as social and community hubs, becoming models for ecological community development and Smart Growth.¹

Through the development of “EIZ” Plans, the residents would identify their concerns, fill in information gaps, and put in place mechanisms to collectively address environmental issues. The Plan would be developed in partnership by all parts of the community, including, but not limited to, the residents, special interest groups, local government, local industry and other agencies. It would be a serious commitment among residents to making a difference and would be an accepted planning tool recognized by various levels of government. “EIZ” Plans would tackle the issues that local neighborhoods identify as important to their health, safety, and enjoyment of their local environment. Strategies would be developed to address issues such as:

- Climate Change and Air Quality
- Urban Energy
- Sustainable Land Use and Development
- Sustainable Transportation
- Solid Waste and Materials Management
- Sustainable Water and Wastewater Management
- Pesticides in the Urban Environment

While EIZs are currently only at the idea stage, a pilot project initiated by the International Institute for Sustainable Development (IISD) and the Natural Resources Institute (NRI) at the University of Manitoba has tested the idea of EIZ and EIZ Plans in three Winnipeg neighbourhoods. Similar processes have been developed within Winnipeg, in other Canadian cities, and in other countries around the world.²

¹ Winnipeg Civic Environment Committee. *Sustainable Winnipeg: A Comprehensive Environmental Agenda*. Winnipeg, 2004. p. 7.

² Willard, Terri. [Environmental Improvement Zones \(EIZ Zones\): Considerations for Implementation in Winnipeg, Canada](#). Winnipeg: International Institute for Sustainable Development, 2005.

This Guide provides general background on the types of issues which EIZs in Winnipeg might wish to address, derived from the priorities established in *Sustainable Winnipeg: A Comprehensive Environmental Strategy*. Recognizing that detailed information about individual and collective actions has been compiled by the Manitoba Eco-Network in its “Green Guide to Winnipeg”³, this EIZ Guide focuses on how these issues and actions fit within the framework of the City’s comprehensive environmental strategy. It also provides insight into the challenges of securing reliable and timely data at the neighbourhood level in order to establish baselines and to demonstrate the impact of investments in local action. Finally, the Guide provides the results of investigations into the three pilot neighbourhoods in order to demonstrate how the early phases of neighbourhood planning might be done once EIZ anchor institutions are established and funded as per the recommendations of the EIZ Implementation Plan.

2. Winnipeg Environment and Neighbourhood Change

Like many Canadian cities, Winnipeg’s environmental situation is mixed. However, it is difficult to describe the environmental quality as a whole, given the lack of standardized environmental reporting in the municipality. While this exercise has been discussed many times, appropriate resources have yet to be dedicated to undertaking environmental reporting on a regular basis in a manner that incorporates changes made by citizens in addition to those undertaken by the three levels of government. It is hoped that the current Winnipeg Quality of Life Indicators initiative spearheaded by the International Institute for Sustainable Development and the United Way will assist in progressing environmental reporting; however, results are still a few years away.

In the meantime, the best we can hope to do is to describe trends and baselines of various components of the environment. Following the framework of *Sustainable Winnipeg*, the following section briefly outlines for each issue:

- What it is and why it is important;
- Available baseline and trend data on the issue and attitudes towards it;
- Existing programmes and actions at the local level; and
- Recommendations on how EIZs might contribute to the implementation of recommended actions.

Unless otherwise noted, baseline data and programme information has been derived from *Sustainable Winnipeg*.

It is important to note that the majority of the recommended actions are derived from theories of community-based social marketing (CBSM). They are not simply education or public information campaigns run at the neighbourhood level. As noted by Canada’s leading CBSM practitioner, Doug McKenzie-Mohr, “Community-based social marketing draws heavily on research in social psychology which indicates that initiatives to promote behavior change are often most effective when they are carried out at the community level and involve direct contact with people. The emergence of community-based social marketing over the last several years can be traced to a growing understanding that programs which rely heavily or exclusively on media advertising can be effective in creating public awareness and

³ Reynolds, Lindor. *The Green Guide to Winnipeg*. Winnipeg: Manitoba Eco-Network, 1992.

understanding of issues related to sustainability, but are limited in their ability to foster behavior change.”⁴ Community-based social marketing is an attractive alternative to information intensive campaigns. Its effectiveness is due to its pragmatic approach. This approach involves: identifying barriers to a sustainable behavior, designing a strategy that utilizes behavior change tools, piloting the strategy with a small segment of a community, and finally, evaluating the impact of the program once it has been implemented across a community.⁵

EIZs also build on a growing body of change management literature which recognizes that individual change is highly context-dependent. People’s wider environment must support and facilitate change for programme effects to be sustained.⁶ EIZ’s serve to support this broader contextual change by establishing programmes which remove obstacles to change and which report back to peer groups on the collective impact of individual change.

2.1. Climate Change and Air Quality

Climate change and air quality both relate to the cumulative impact of airborne emissions. Climate change is the result of the accumulation of pollutants and greenhouse gases (GHGs) in the atmosphere. It is a global challenge given that its impacts may be felt around the world from where emissions occur. Impacts of climate change include changes in temperature, precipitation, sea level, and storm severity. By contrast, air quality tends to be a more local or regional issue, with sources of pollution and impacts located in closer proximity to one another. Impacts of poor air quality are most directly linked to poor human, plant and animal health. It may also be associated to the deterioration of physical infrastructure through chemical reactions between airborne substances and building materials.

2.1.1. Baseline and Trends

Winnipeggers produce 8 tonnes of greenhouse gases per capita per year. This locates Winnipeg in the middle of the pack of municipalities working actively to curb their greenhouse gas emissions – but, emitting less per capita than similar prairie cities such as Regina (13.3) and Edmonton (16.13).⁷ In a November 2002 opinion poll, 64% of Winnipeggers indicated that they could have a positive impact on limiting their contribution to global climate change. In a separate question, 42% indicated that they were more concerned about climate change than they had been two years previously.

Unlike cities that are situated in valleys or close to mountains, Winnipeg’s flat terrain and frequent winds dilute and disperse much of the air pollution produced here. Provincial air

⁴ McKenzie-Mohr, Doug. “Guide – Preface.” *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*. <http://www.cbsm.com/Chapters/preface.htm>

⁵ McKenzie-Mohr, Doug. “Guide – Introduction.” *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*. <http://www.cbsm.com/Chapters/introduction.htm>

⁶ Neill McKee, Erma Manoncourt, Chin Saik Yoon, Rachel Carnegie. “Introduction.” *Involving People, Evolving Behaviour*. Southbound and UNICEF, 2000. http://www.southbound.com.my/behaviour/invol_ch.htm

⁷ Federation of Canadian Municipalities. *PCP Community Emissions Report*. May 2004. http://kn.fcm.ca/file_download.php?URL_ID=5862&filename=10843433011PCP_Community_Emissions_Report.xls&filetype=application%2Fvnd.ms-excel&filesize=453120&name=PCP+Community+Emissions+Report.xls&location=user-S/

quality monitoring initiatives indicate that air quality in Winnipeg is good and relatively unchanged over the past few years.⁸ Winnipeg's Air Quality Index (AQI) is based on air monitoring data for carbon monoxide, particulate matter (PM10), nitrogen dioxide, ground-level ozone and fine particulate matter (PM2.5). Since 1995, as part of a joint Manitoba Conservation and Environment Canada program, the AQI for Winnipeg has been reported by Environment Canada on the weather channel on Winnipeg cable television. The AQI is also accessible through Environment Canada's automated phone-in weather information service.

Summary of Criteria Air Contaminant (CAC) emissions in metric tones as updated in December 2004.

<i>Source Category</i>	<i>TPM</i>	<i>PM10</i>	<i>PM2.5</i>	<i>SO_x</i>	<i>NO_x</i>	<i>VOC</i>	<i>CO</i>	<i>NH₃</i>
<i>Industrial</i>	5649	1779	620	306	2012	934	1196	21
<i>Fuel Combustion</i>	1725	1634	1625	274	1866	2203	9365	24
<i>Transportation</i>	2702	2683	2427	1127	35973	17731	173136	227
<i>Incineration</i>	0	0	0	0	1	0	0	0
<i>Miscellaneous</i>	467	418	356	0	0	12861	741	1601
<i>Open Sources</i>	146209	38869	4867	1	339	2821	10639	2147
<i>Total</i>	156752	45383	9895	1707	40191	36550	195078	4019

(Source: Environment Canada, National Pollutant Release Inventory⁹)

It is currently not possible to access data regarding neighbourhood level contributions to greenhouse gas emissions or to air pollutants. While significant point sources of air pollution can be identified through the National Pollutant Release Inventory by postal code, non-point sources contributed by household and small business activities are not included.

2.1.2. Existing Community-Oriented Programmes

In 1998 the City of Winnipeg became a member of the Partners for Climate Protection Program (PCP). The ultimate goal of PCP is to reduce GHG emissions from municipal operations by 20 per cent and community-wide GHG emissions by at least six per cent below 1990 levels, and to reach both these targets within ten years of a municipal government joining the program. Winnipeg has completed the first stage of the organization's five-stage program. However, given the absence of a city environmental coordinator since 2003, it has not yet developed an emissions reduction plan or local action plan as required. Despite the commitment of the federal and provincial governments to tackling climate change, without a clear plan endorsed by citizens and council, it is difficult to see how Winnipeg will achieve a 6% community-wide GHG reduction by 2008.

⁸ Government of Manitoba. *2005 Provincial Sustainability Report for Manitoba*. Winnipeg: Government of Manitoba, 2005. p. 17-18

⁹ Environment Canada. "Online Data Search Results for: Major Urban Centre of Winnipeg (MB)" [National Pollutant Release Inventory](http://www.ec.gc.ca/pdb/querysite/results_e.cfm?DisplayCAC=1&opt_report_year=2004&opt_province=&opt_postal_code=&opt_location_type=URBAN&opt_urban_center=602_MB&community1=)

2.1.3. Recommended Activities and Potential Contribution of EIZs

According to *Sustainable Winnipeg*, the City of Winnipeg could help to foster sustainable behaviour among its citizens and within its communities by considering the following options:

- Educating citizens on climate change and policies directed towards reducing community greenhouse gas emissions;
- Empowering citizens and communities to reduce greenhouse gases by providing them with the tools to develop community based reductions programs;
- Cooperating with other levels of government and with NGOs in providing community based climate change programs;
- Contributing support to community alternative transportation initiatives;
- Working with industry and citizen groups to mitigate nuisance odours that impact negatively on citizens; and
- Educating the public on things that they can do to limit their contribution to poor air quality.

EIZs have a crucial role to play in the development and implementation of any Winnipeg PCP local plan. Their primary strengths would be in the realm of community education – helping citizens to understand the linkages between the various areas of a community Environmental Improvement Plan and reducing greenhouse gas emissions. Working at the neighbourhood level, EIZs could help residents and businesses to use emissions calculators to identify priority areas of activity on an individual and collective basis. EIZs could also assist with celebrating neighbourhood successes in reducing airborne GHG and particulate emissions, thus enabling others to better understand solutions which are most applicable for their community economic and social circumstances.

More specific actions related to fostering sustainable transportation, land use and development, urban energy, and waste management will be outlined in the applicable sections below. All are closely related to achieving climate change and air quality goals in the community.

2.2. Urban Energy

Concerns about climate change and air quality are closely linked to urban energy scenarios. In Winnipeg, these concerns are linked to both energy conservation and sustainable energy. Energy conservation initiatives can help to manage demand, while sustainable energy initiatives facilitate the use of more renewable energy supply sources. Both approaches can contribute not only to a reduction of environmental impacts, but also to significant economic savings in a time of soaring energy prices.

2.2.1. Baseline and Trends

In Canada, per-capita energy consumption is 320 GJ (Giga Joules) per year, while energy consumption in other developed nations such as Japan (153 GJ), Germany (165 GJ), England (166 GJ), Austria (129 GJ) and France (169 GJ) remain significantly lower. Excessive heating, cooling, lighting and ventilation expenditures are evidence of unsustainable energy consumption.

However, energy usage in Manitoba is better than the national average and continues to show improvements. Manitoba experienced a 17 per cent reduction in energy intensity over the five-year period from 1996 to 2001 and a 30 per cent overall reduction from 1982 to 2001. Energy intensity has stabilized from 2001 to 2003.¹⁰ In addition, improvements in energy efficiency and consumers switching from non-renewable sources, such as refined petroleum products, to renewable hydroelectricity, contributed to an increase in the ratio of renewable to total energy consumption from 1980 to 2003 (18% to 27%). Nevertheless, the

Neighbourhood Data Availability

It is not currently possible to access *neighbourhood*-level data regarding average energy consumption. Data on participation in energy related programming are collected, but only at the provincial scale, not the neighbourhood scale. Requests for neighbourhood level energy consumption for the pilot communities in this study were denied by Manitoba Hydro on the grounds that the access to and aggregation of individual household data would be in contravention of current privacy legislation.

continued reliance of the transportation sector, which accounts for almost a third of all energy consumed in Manitoba, on refined petroleum products (99%) will continue to present both environmental and economic challenges.

In the November 2002 poll commissioned by the City of Winnipeg Civic Environmental Committee, 89% of those polled indicated that they were supportive of tax incentives towards residential and commercial energy efficiency upgrades.

2.2.2. Existing Community-Oriented Programmes

The primary community-oriented urban energy programmes in Winnipeg are provided through Manitoba Hydro's "Power Smart" programme, which provides educational materials and financial assistance for both household and business energy reduction.¹¹ Hydro's acquisition of the provision of natural gas services in Winnipeg has enabled PowerSmart to expand its initial vision of electricity conservation and to deliver more integrated household and business auditing services which identify opportunities for energy savings in lighting, heating, cooling, and other energy applications. It is also able to provide discounted loans for renovations, which may be paid on future energy bills. PowerSmart has developed a suite of online and written materials to help customers to both assess their energy usage and to plan ways to improve it.

Since the sale of Winnipeg Hydro to Manitoba Hydro, the City of Winnipeg has taken a more arm's length approach to citizen energy issues.

2.2.3. Recommended Activities and Potential Contribution of EIZs

According to *Sustainable Winnipeg*, the City of Winnipeg could help to foster sustainable behaviour among its citizens and within its communities by considering the following options:

¹⁰ Govt of Manitoba, p. 36.

¹¹ Manitoba Hydro. "Overview – Saving with PowerSmart."
http://www.hydro.mb.ca/saving_with_ps/psmart_overview.shtml

- Educating citizens on home energy efficiency;
- Educating citizens on landscape design strategies that enhance home energy efficiency;
- Providing tools to citizens to develop community-operated home energy efficiency programs and work towards energy efficiency goals;
- Ensuring that City tax assistance programs (for example, the Home Renovation Tax Assistance Program) emphasize eco-efficiency upgrades;
- Ensuring that future Smart Growth development follow guidelines maximize solar access and building performance;
- Exploring the use of innovative energy systems (for example, district heating and geothermal heating) in future developments;
- Working with Manitoba Hydro to promote geothermal heating cooling to Winnipeg residents and businesses; and
- Educating citizens on sustainable energy sources.

EIZ's could serve as valuable mechanisms for connecting Winnipeg residents and businesses with Manitoba Hydro energy conservation services, as well as other sources of information. Based within the neighborhoods, they would be in a position to both educate the public and to help them access bulk discounts on energy conservation products and services. They would also be in a position to encourage neighbourhood public facilities (e.g. schools, recreation centres) to become hubs of energy efficiency implementation and education through energy retrofitting and landscaping efforts – backed, perhaps, by modifications to the Home Renovation Tax Assistance Program, administered by the Department of Planning, Property and Development. As EIZs mature, they might also be able to serve as local champions and sources of information on small-scale renewable energy generation.

Should the federal government approve the creation of a national low-income home energy efficiency program, as recommended by Green Communities Canada,¹² direct implementation of this programme in Winnipeg could be undertaken by EIZs. This could prove to be a valuable source of funding, training, and employment within low-income communities.

By serving as an intermediary with Manitoba Hydro, the EIZ would hopefully also enable the compilation of data on energy usage and retrofits to better enable citizens to see the linkages between private investments and energy savings – thus encouraging additional investments.

2.3. Sustainable Land Use and Development

Sustainable land use and development is the largest issue addressed by Sustainable Winnipeg, including specific sections and recommendations on:

- Guiding land use through sustainable urban growth
- Parks, open spaces and natural areas
- Developing brownfield sites
- Trails and greenways
- Green building

¹² Green Communities Canada. “National Affordable Housing Energy Efficiency Program (NAHEEP)” November 2004. <http://www.gca.ca/indexcms/index.php?naheep>

- Managing the urban forest

The attention given to this subject reflects the importance of the physical layout of the city to all other areas of environmental action, particularly change through transportation demand and energy consumption. While many of these issues have strong policy implications, there are also practical programmes that can and should be developed. Neighbourhood-based projects can also have significant implications for the conservation of local habitat for the enjoyment of both citizens and urban wildlife.

2.3.1. Baseline and Trends

Historically, Winnipeg has consumed more land per capita than many other Canadian cities. In November of 2002, the City of Winnipeg Civic Environmental Committee commissioned a poll concerning seven environmental issues. Respondents felt least informed about sprawl. Twenty-seven percent of those polled indicated that they were more concerned about sprawl today than they were two years ago. Furthermore, 74% indicated that they were in favour of an urban growth boundary and preferred infrastructure renewal over expansion.

Neighbourhood Data Availability

It is comparatively easy to access neighbourhood level data regarding sustainable land use and development. Most data is held by City departments including Public Works and Planning, Property and Development. This information is frequently stored within GIS platforms that enable filtering at various geographic levels to support planning.

Winnipeg has more parkland per 1000 persons than Ottawa, but significantly less than Calgary, Edmonton and Vancouver. When asked to indicate what they value most about Winnipeg, citizens ranked “scenery, green space and open space” as the sixth most valuable City feature on a list of 14 choices (2001 poll commissioned by the CAO Secretariat).

A prominent feature of Winnipeg is its urban forest. The total number of trees in Winnipeg's urban forest is estimated to be 2.73 million.¹³ Tree cover in the area prior to settlement was much less

extensive and primarily followed the rivers. Winnipeg's urban forest is comprised of a limited number of species due to its harsh climate. Some species that do grow in the city are ash, maple, oak, poplar, basswood, willow, birch, spruce, pine, cedar, some fruit trees and shrubs. Most notable is the presence of nearly 170,000 elm trees - the largest remaining mature urban elm forest in North America.

Complementing the existence of natural land uses is a growing focus on green buildings within the built landscape. While the number of certified green buildings is still limited, a series of high-profile projects in downtown Winnipeg (e.g. Red River Community College Princess Street Campus, Mountain Equipment Co-op, Manitoba Hydro headquarters) have spurred interest in the inclusion of green building features in other new and existing properties.

¹³ Winnipeg Public Works Department, Forestry Branch. “Winnipeg Tree Facts.” <http://www.winnipeg.ca/publicworks/Forestry/PAMPHLETS/wpgtreefacts pamph.doc>

2.3.2. Existing Community-Oriented Programmes

Land use planning activities are anchored by the City of Winnipeg Planning, Property and Development (PP&D) Department. Its activities include overseeing: Plan Winnipeg, secondary plans, zoning, heritage conservation, inspection and renovation programs for commercial and residential buildings, riverbank management and the sale of public rights-of-way. PP&D also oversees neighbourhood planning activities and business improvement zones. These activities require a high degree of public consultation and coordination, some of which is managed in-house while other aspects are sub-contracted to local consulting and engineering firms.

The City of Winnipeg is currently working on a Sensitive Lands Plan. The City Naturalist has developed an inventory of natural areas in Winnipeg to support this initiative. The City is also working to develop a comprehensive Parks Framework Plan and a Facilities Rationalization Study. These two studies will identify issues and solutions associated with City parks and facilities. However, as directed by Council, these plans do not address incentives or regulations regarding the environmental management of privately-held lands. In addition to providing interpretive services, the Naturalist Services Branch works (Public Works Department) with community groups on habitat restoration and naturalization projects.

Trail users and trail stewardship groups in the City of Winnipeg have formed a coalition called the Winnipeg Trails Association in order to further their goals regarding trails within the City of Winnipeg. The Winnipeg Trails Association in partnership with Rivers West and the City of Winnipeg initiated a strategic planning process in order to develop a Strategic Trails Plan for the City of Winnipeg. This plan, published in July 2003, identifies key needs and priorities of the trail groups. It is anticipated that the plan will be used to steer the City's reprioritization of its Winnipeg Parkway System and its acquisition of lands for trails. There is also a growing interest in linking outlying Capital Region parks with Winnipeg city parks through a network of trails and greenways. The floodway redevelopment presents numerous opportunities to develop new trail systems.

Activities related to the health of the urban forest are primarily undertaken in the city by the Department of Public Works Urban Forestry Branch as well as the non-profit Coalition to Save the Elms. The Forestry Branch is responsible for all aspects of 'urban forestry' including tree inventories, tree planting, watering and fertilizing, pruning, D.E.D. control, removal operations, public relations and education, extension services, group workshops, on-site inspections and contract administration. Direct Service includes both boulevard and park trees, however the Forestry Branch also becomes involved in projects in natural areas and other public open spaces. The Coalition to Save the Elms complements these efforts with citizen actions to protect, preserve and promote the health of the urban forest and the urban environment through public awareness and education. While their signature activity is the promotion of neighbourhood elm banding activities each fall, their mandate has expanded beyond elm trees to include the entirety of Winnipeg's urban forest.

Complementing trail, park and forest activities on the "green" side of land use, there are also initiatives underway regarding the improvement of the built landscape. Within the past five years, a growing community of developers, architects, and property owners have initiated a

provincial green building movement. Formally established as the Manitoba Chapter of the Canada Green Building Council in May 2005, these organizations work to promote green building practices within Winnipeg. Through the initiation of a Green Building Network, the Program Committee of the Manitoba Chapter has also begun to build a communications network of building-related organizations.

2.3.3. Recommended Activities and Potential Contribution of EIZs

According to *Sustainable Winnipeg*, the City of Winnipeg could help to foster sustainable behaviour among its citizens and within its communities by considering the following options:

- Educating the public and developers on the benefits of sustainable urban growth and the problems associated with urban sprawl;
- Creating opportunities and incentives for citizens to live in close proximity to their work;
- Establishing design guidelines that ensure high quality pedestrian environments in both the new and existing urban fabric; and
- Educating the public on the value of a biologically diverse urban landscape;
- Providing public education on naturalization techniques;
- Educating the public on the importance of preserving habitat on private property and empowering citizens and community groups by providing them with the tools and resources to naturalize disturbed areas;
- Providing incentives for preserving and naturalizing habitat on privately owned property;
- Cooperating with the private sector and other levels of government to encourage the donation or use of private land to be used in trail and greenway development;
- Undertaking cooperative initiatives with organizations that promote community health and active living in order to encourage the use of Winnipeg's trails and greenways for both daily commuters and recreational users;
- Educating citizens on the benefits of green building;
- Providing tools that empower citizens, private corporations and developers to adopt green building standards;
- Educating the public on the benefits of the urban forest;
- Encouraging citizens to become involved in tree planting and the care of trees on private lands.

Given that this section of *Sustainable Winnipeg* has become pivotal in 2005,¹⁴ it is foreseen that Environmental Improvement Zones might take strong actions in this area. Simple initial activities could include the establishment of neighbourhood demonstration areas on naturalization of habitat, local trees, and green building – accompanied by local sales of materials and neighbourhood volunteer projects. Such projects could be undertaken in partnership with housing agencies and organizations such as Habitat for Humanity and the

¹⁴ Following the publication of *Sustainable Winnipeg*, the Civic Environment Committee established two working groups to guide more in-depth activities in 2005: one on green building and one on land use planning. The selection of these topics was undertaken based on an assessment of both importance and the opportunity for impact in the following year.

Lions Club, as well as with schools and public recreational facilities. EIZ staff could also facilitate access to information on these issues through the neighbourhood office and communications vehicles.

While it is recommended that EIZs focus primarily on the development and implementation of practical CBSM programmes, an additional focus of work for EIZs could be informing and engaging the neighbourhood in local planning issues, such as the development of secondary plans, notification of zoning change applications, and trail opportunities. While these processes are carried out through reviews by city departments, Community Committees, the Executive Policy Committee, and City Council as a whole – there are opportunities for citizen input. EIZs could help to publish hearings relevant to the neighborhood and provide access to maps and data held by the city, in order to ensure informed citizen participation.

2.4. Sustainable Transportation

A sustainable transportation system is one that:

- allows the basic access needs of individuals and societies to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations.
- is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy.
- limits emissions and waste within the planet's ability to absorb them, minimizes consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimizes the use of land and the production of noise.¹⁵

In Winnipeg, sustainable transportation approaches focus on incorporating three areas of effort: transportation demand management (TDM), public transportation, and active transportation. TDM is a general term for various strategies that increase transportation system efficiency. It emphasizes the movement of people and goods, rather than motor vehicles, and so gives priority to public transit, ridesharing and nonmotorized travel, particularly under congested urban conditions.¹⁶ There are many different TDM strategies with a variety of transportation impacts. Some improve the transportation options available to consumers. Some cause changes in trip scheduling, route, destination or mode. Others reduce the need for physical travel through more efficient land use, or transportation substitutes. As health concerns skyrocket in North America, TDM strategies are increasingly incorporating strong active transportation components. Active transportation is defined by the Canadian Federation of Municipalities as “choosing to walk, cycle or use some other physical activity to get where you need to go.” By including walking and cycling considerations in urban design and planning we build socially, environmentally and economically healthy and vibrant communities.

¹⁵ Centre for Sustainable Transportation. “Definition and Vision of Sustainable Transportation.” October 2002. <http://www.cstctd.org/CSTadobefiles/Definition%20Vision%20English%20Oct%202002.pdf>

¹⁶ Victoria Transport Policy Institute. “Why Manage Transportation Demand?” *Online TDM Encyclopedia*. May 2005. <http://www.vtpi.org/tdm/tdm51.htm>

2.4.1. Baseline and Trends

In Canada's major cities the average commuting time, for a round trip by car, is 48 minutes. Winnipeg is above the national average at 51 minutes per commute, higher than Calgary (45 min.), Edmonton (43 min.), Halifax (38 min.), Hamilton (44 min) and Quebec (45 min). It is lower than Toronto (59 min.), Vancouver (60 min) and Montreal (54 min.). Winnipeg's citizens are, understandably, increasingly concerned about traffic congestion.

In recent decades, the number of trips made by automobiles in Winnipeg has grown much faster than the rate of population growth. In 2001, the City of Winnipeg reported 4.6 billion total vehicle kilometres of travel per year on Winnipeg roadways, and 7 million total person trips (using automobiles) per year on Winnipeg roadways. Continued growth in the proportion of urban trips made by the automobile is neither financially nor environmentally sustainable.

Neighbourhood Data Availability

The Dept of Public Works undertakes a yearly study of traffic flow within the city, as well as additional studies, which are made publicly available for a nominal data retrieval fee. Transit ridership information is available; however, it requires an additional level of processing to convert from route-based data to neighbourhood based data. Data on active transportation is not collected in a systematic fashion.

In the November 2002 poll commissioned by the City of Winnipeg Civic Environmental Committee, citizens ranked their concern over traffic congestion higher than any other environmental issue. 51% of those polled indicated that they are more concerned about traffic congestion today than they were two years ago. There is citizen interest in more sustainable alternatives. 56% of respondents indicated that they would be willing to reduce their automobile use by taking public transportation more often. 74% of respondents indicated that they are willing to reduce their motorized transportation by walking or cycling more.

Nevertheless, continued physical expansion of the city into and the lack of a comprehensive TDM strategy for the city continue to limit alternatives. In an October 2002 CAO Secretariat survey, 85% of respondents said it was easy to get around Winnipeg by car, whereas only 56% stated it was "easy to get around Winnipeg by bicycle" - despite the existence of over 110 km of signed cycling routes. Additionally, only 20% of the CAO Secretariat survey respondents felt safe walking alone at night in the downtown.

2.4.2. Existing Community-Oriented Programmes

Sustainable transportation initiatives in Winnipeg are currently scattered between a variety of city departments and non-profit agencies. City Council's approval of an Integrated Planning Model for the City of Winnipeg will serve to integrate land-use planning with transportation planning decisions. It is anticipated that this model, applied by PP&D in collaboration with Public Works, will incorporate TDM policies into future land-use decisions.

Winnipeg Transit has undertaken many innovative projects geared towards increasing ridership, including the Eco-pass program, post-secondary discount passes, dial a ride services, a web-based trip planner (Navigo), upgrades of its existing rolling stock, integrated bicycle racks on buses, and participation in the Urban Transportation Showcase Program.

Many of these initiatives are identified in the Council adopted report titled *Direction to the Future* that provides a plan to develop supportive conditions for transit. Winnipeg Transit's commitment to innovation, its understanding of the barriers to public transportation, coupled with public willingness to utilize transit should lead to increased ridership in the long run.

In 1993, the City of Winnipeg commissioned Marr Consulting and Communications to undertake the Winnipeg Bicycle Facility Study. The report recommended an improvement in road conditions, improved cycling facilities, more direct route for commuters, integrating facilities and user concerns into the planning process. Further, the report highlighted the value of both recreational and commuter cyclists, the adoption of design standards, and adequate resources for the maintenance of facilities. In 2003, a detailed analysis of active transportation, at the planning stage of policy and project development in Winnipeg, was undertaken by Allison Cook, Active Transportation Planner for London Ontario, and University of Manitoba City Planning graduate. In March 2004, City of Winnipeg initiated an Active Transportation Study. This study sought to update and expand the 1993 Winnipeg Bicycle Facilities Study. Facilities are highlighted in the Terms of Reference for the Active Transportation Study, although the scope of work also requires an implementation strategy for the facilities and for programs, including an education/marketing strategy to promote active transportation.

In addition to formal city-run programs, Resource Conservation Manitoba undertakes a number of sustainable transportation programs in Winnipeg including:

- *Active and Safe Routes to School*: encourages school children to use active modes of transportation to commute to and from school.
- *Commuter Challenge*: is an annual event that promotes sustainable transportation among individuals in Winnipeg businesses and universities. Groups submit the number of green kilometers they traveled and their reductions in greenhouse gas emissions are calculated.
- *Off Ramp Manitoba*: targets high school students, teachers and administration to use alternative modes of transportation to commute to and from schools.
- *Walking School Bus*: this is a pilot project that attempts to deal with traffic related issues around schools by promoting a safe walking environment for children to walk to school.

2.4.3. Recommended Activities and Potential Contribution of EIZs

According to *Sustainable Winnipeg*, the City of Winnipeg could help to foster sustainable behaviour among its citizens and within its communities by considering the following options:

- Empowering communities to develop Transportation Demand Management (TDM) programs - for example, community bicycles, vehicle sharing cooperatives, and car pooling programs;
- Providing public education campaigns on TDM;
- Providing ridership incentives to communities that show support for Transportation Demand Management programs;
- Promoting the "Eco-pass" program to major employers in Winnipeg.

- Partnering with local NGOs, community groups and other levels of government to support active transportation initiatives;
- Empowering communities to promote and engage in active transportation initiatives;
- Providing public education campaigns on walking and cycling;
- Ensuring the principle of equity by providing safe designated bicycle lanes, active and commuting infrastructure (for example, safe bicycle storage areas), and that streets are walkable and pedestrian friendly; and
- Cooperating with private land owners and other levels of government to negotiate access to rail rights of way for use in the development of cycling and pedestrian corridors.

The trend in European countries such as Sweden and Denmark has been to encourage the integration of several types of transit options while discouraging single occupant transit options through policy, legislation, education, and pricing mechanisms. For Winnipeg, models of integrated transit options could provide a longer term solution to the issue of growing traffic congestion. Since many of the European countries that currently have integrated transit systems also share climates similar to Winnipeg's climate, exploring models of integrated transit from countries such as Denmark, Sweden, and Iceland may help with the implementation of *Sustainable Winnipeg*.

Integrating an improved bus service (more routes with better service and shorter wait times) with bicycle and pedestrian routes and rapid transit would create less congestion while having the additional benefit of lowering emissions. Larger scale and long term visioning around developing an integrated transit system should involve developers, models of successful transit integrated municipalities, countries, and/or regions, Winnipeg Transit, and the Planning, Property & Development Department. Shorter term and smaller scale projects such as Active and Safe Routes to School, the Walking School Bus, and education of the public and businesses about the EcoPass and benefits of carpooling—both economic and environmental—could be undertaken in partnership with groups such as Resource Conservation Manitoba and the Eco-Network.

EIZs could be instrumental in developing neighbourhood level transit strategies that focus on integrating existing mass transit options and identifying those options such as pedestrian corridors and Walking School Buses, that could be easily implemented in neighbourhoods. EIZs could also be used to develop a comprehensive network of neighbourhood transportation issues and opportunities whereby citizens can have input into the City of Winnipeg's larger transportation strategy. As well, EIZs could be used to develop an overarching policy at both the municipal and provincial level that reflects Winnipeg's and the province's commitment to moving mass transit options forward in addition to helping reduce emissions and climate change impacts.

2.5. Solid Waste and Materials Management

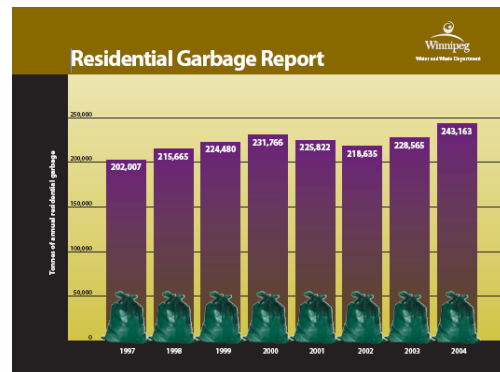
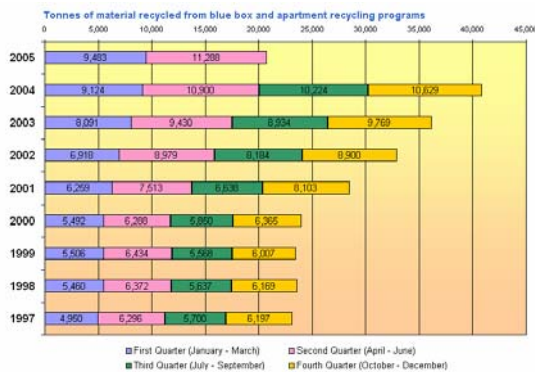
By-products of residential consumption include organic kitchen and yard waste, packaging waste, post consumer waste, and household hazardous waste (HHW). Household hazardous wastes are generally corrosive, toxic, reactive or flammable and include used oil products,

liquid fuels, pharmaceuticals, consumer electronics, used batteries, paint, stains, cleansers, and pesticides. Residential solid waste makes up approximately 40% of Canada’s solid waste stream while the remaining 60% results from industrial, commercial, and institutional activities (ICI).

Problems related to landfills and waste production include: surface and groundwater contamination, methane gas, land consumption, concentration of household hazardous waste, and the loss of potential revenues generated from the recovery of recyclables. The key components of a sustainable waste minimization strategy include source reduction, recovery and reuse, recovery and recycling, or composting and disposal.

2.5.1. Baseline and Trends

Winnipeg’s population of 619,544 represents 261, 311 households. These households produce an estimated 140, 017 tonnes of residential solid waste annually¹⁷. Winnipeg residents currently divert approximately 50% of available recyclables away from landfill. The expansion of the recycling program in 2001 to include multi-family dwellings, and the introduction of “no sort” collection in 2003 substantially increased the quantity of materials recovered. Nevertheless, the amount of residential garbage continues to grow, as do the associated costs of collection and disposal.



(Source: Winnipeg Water and Waste Dept¹⁸)

(Source: Winnipeg Water and Waste Dept¹⁹)

It is estimated that 70% of the City’s ICI waste is diverted away from Winnipeg’s Brady Landfill into landfills located within the Capital Region. Competition among Capital Region landfills has led to tipping fees in Manitoba being among the lowest in Canada. It is, therefore, difficult to address waste reduction in the ICI sector without Provincial assistance.

¹⁷Resource Conservation Manitoba. “Ecoville waste reduction” [September May 2005](http://www.mb.reducingwaste.ca/cgi-bin/townhall.pl/townhall)<http://www.mb.reducingwaste.ca/cgi-bin/townhall.pl/townhall>.

¹⁸ Winnipeg Water and Waste Department. “Residential recycling report.” <http://www.winnipeg.ca/waterandwaste/recycle/recyclingReport.stm>

¹⁹ Winnipeg Water and Waste Department. “Residential Garbage Report (January 2005).” http://www.winnipeg.ca/waterandwaste/pdfs/garbage/garbage_chart_jan05.pdf

2.5.2. Existing Community-Oriented Programmes

In May 2001, City Council passed the Waste Minimization Strategy. This strategy includes provision for recycling in public spaces, recycling in apartments and condominiums, and a pilot program for the collection of yard waste. The Solid Waste Division provides three major services to the City of Winnipeg: refuse collection; solid waste disposal (Brady Road landfill operations); and recycling/waste minimization. Other services, within these major lines of business, provided by this division are: bulky waste collection; appliance disposal; dead animal collection; landfill monitoring; recycling of Christmas trees, fall leaves, used tires and bulk metal. Programs specifically related to waste minimization include:

- **Ozone depleting substance (ODS) appliance collection and disposal** is a service that provides collection and refrigerant removal of the community's unwanted refrigeration appliances
- **Recycling bulk metal** is a service offered to metal salvagers that provides sale of discarded metal goods (including household appliances/ water tanks) that are specifically directed to be stockpiled by residents bringing same to landfills.
- **Recycling Fall Leaves Service** provides leaf collection depots and transportation and disposal of bagged leaves to landfill sites for composting.
- **Recycling Christmas trees** is a service that provides the operation of Christmas tree recycling depots. The Tresses are transformed into wood chips, which can be used by the general public and the City.
- **Recycling material collection, processing and marketing** is a service that provides regular weekly collection of 14 recyclable materials from blue boxes at single-family residential premises, operation of 9 recycling depots for multi-family premises, and the processing and marketing of these materials.
- **Recycling used tires** is a service that provides the stockpiling and recycling of all rubber tires brought into the landfills by residents.
- **Residential solid waste bulky waste collection** is a service that provides the collection and disposal of material designated as "bulky," as specified in the solid waste regulation. This program has a \$10.00 fee.
- The City of Winnipeg offers a **free household hazardous waste collection** centre. This service is available at the Miller Environmental Corporation (65 Trottier Bay).

Neighbourhood Data Availability

The Water and Waste Dept. has been collecting data yearly since 1997 about tonnes of material recycled through the blue box and apartment recycling programs. Annual city-wide garbage production has also been collected since 1997. The Water and Waste Dept. periodically completes a Programme Participation Survey which, in conjunction with social demographics is used to produce data on neighbourhood levels of both garbage production and neighbourhood recycling. This information is by request only by contacting the Water and Waste Dept. directly.

The City works closely on residential solid waste minimization with the Manitoba Product Stewardship Corporation. Under the provincial Waste Reduction and Prevention Act

(WRAP), MPSC is mandated to establish and administer a waste reduction and prevention program for designated materials for Manitoba.²⁰ These currently are:

- beverage containers (non-deposit)
- packaging of pre-packaged goods
- in-store packaging
- advertising materials
- newspapers
- magazines
- telephone directories

MPSC programs encompass Municipal Residential Recycling, Promotion and Education, Technical Support and Consulting, Waste Reduction Initiatives, and Research and Development.

Also in the residential sector, Resource Conservation Manitoba, a non-profit non-governmental organization directed to promote ecological sustainability, hosts composting workshops and seminars for groups and waste managers. They also have different compost demonstration sites, where the community can see and understand the composting process.

The City of Winnipeg provides virtually no services for ICI waste removal and disposal, leaving that to the private sector. However, as part of the City of Winnipeg's initiatives to reduce ICI waste, the adaptive reuse of heritage buildings has been encouraged. The City has adopted policy on the preservation of historic buildings and provides funding through the Heritage Conservation Tax Credit Program and the CentreVenture Heritage Conservation Program. By preserving its built heritage, the City diverts needless demolition waste from landfills. In the November 2002 poll commissioned by the City of Winnipeg Civic Environmental Committee, 69% of respondents were supportive of providing tax incentives to encourage the adaptive reuse of existing buildings.

2.5.3. Recommended Activities and Potential Contribution of EIZs

According to *Sustainable Winnipeg*, the City of Winnipeg could help to foster sustainable behaviour among its citizens and within its communities by considering the following options:

- Participating in community education programs that emphasize the importance of avoiding excessively packaged goods and extended producer responsibility for waste;
- Empowering citizens by providing them with the tools and knowledge to develop community-based waste minimization programs, set community-wide waste minimization targets, and report on progress;
- Developing an appropriate alternative to autobins in residential neighborhoods;
- Working with the Province of Manitoba and the private sector to increase the availability of HHW depots and the reduction and reuse of materials wherever possible (for example, organizing paint/stain exchanges in cooperation with housing renewal organizations);

²⁰ Manitoba Product Stewardship Corporation. "About" <http://www.mpsc.com/main.asp?contentID=16>

- Educating the public on environmentally friendly household cleansers and the importance of keeping HHW out of landfills;
- Providing incentives for the productive re-use of salvaged building materials; and
- Ensuring shared responsibility by requiring that construction and demolition projects have appropriate waste minimization plans;

Given the vast array of solid waste minimization services currently available to residents and businesses in Winnipeg, EIZs would likely serve primarily as a conduit to existing programmes. Conventional wisdom about solid waste minimization dictates that it can be connected to local community economic development through remanufacturing, producing new products from recovered materials, and developing new applications for products.²¹ In addition, EIZs could also be used to identify potential cost recovery aspects of waste minimization services and also identify potential local economic development opportunities. EIZs could be used by the Province of Manitoba and The City of Winnipeg to provide input into developing and/or attracting larger remanufacturing business opportunities to Winnipeg. The Manitoba Product Stewardship Council in partnership with EIZs, could develop potential community economic development models involving waste diversion, recovery, and remanufacturing.

2.6. Sustainable Water and Wastewater Management

A sustainable water supply is vital to any city's economic growth and for the health of its citizens. The City of Winnipeg has an extensive wastewater collection and treatment program to help maintain aquatic health in the Shoal Lake watershed, the watershed from which the City of Winnipeg also receives its freshwater supply. A sustainable wastewater management plan is an important component of an overall water management system; therefore, the City of Winnipeg's water strategy includes conservation programmes around both fresh water and wastewater disposal.

Well designed water conservation programs provide fiscal and infrastructure advantages, reduce pressure on wastewater treatment plants, and reduce pollutant discharges into the environment. Although conservation programs are normally associated with water shortages, successful conservation programs focus on reducing consumption trends over the long-term²².

Currently, the City of Winnipeg's water supply is provided from Shoal Lake through an aqueduct that covers the 185 kilometre distance between the City of Winnipeg and Shoal Lake. Since completion in 1919, the Shoal Lake aqueduct has provided a reliable water supply, and Winnipeg's waterworks system has been expanded to deliver an average of 225 million litres of water to approximately 270,000 Winnipeg households and businesses²³.

²¹ Philips, J.A. J.A. Philips and Associates. "Managing America's Solid Waste", September 2005, <http://www.nrel.gov/docs/legosti/fy98/25035.pdf>

²² City of Winnipeg, Sustainable Winnipeg: A Comprehensive Environmental Strategy, February 2004, http://www.winnipegcec.org/environmental_strategy/cec_sustainable_winnipeg

²³ Water and Waste Department, City of Winnipeg, "Water: Our Most Essential Resource", September 2005, <http://www.winnipeg.ca/waterandwaste/pdfs/water/essentialResource.pdf>

In addition to the Shoal Lake water source, the Indian Bay intake, and the aqueduct, Winnipeg's water supply and storage system consists of three downstream parts: storage, pumping, and distribution piping and four reservoirs. Deacon is the city's main reservoir supplying water to three regional reservoirs – MacLean, Wilkes and McPhillips. Winnipeg's wastewater collection and treatment system infrastructure also consists of:

- 1,034 kilometres of combined sewers,
- 1,182 kilometres of wastewater sewers,
- 1,372 kilometres of land drainage sewers,
- 76 pumping stations,
- 3 treatment facilities,
- and 76 storm water retention basins.

This large system has received continuous maintenance with the most recent upgrades focused on infrastructure improvements to prevent raw sewage overflows, reducing nutrient overloading in aquatic environments, and developing alternate uses of biosolids. Since 1978, the City has spent in excess of \$200 million to upgrade the system in response to these and other human and aquatic health, and infrastructure maintenance needs. Since 1993, \$57 million has been invested in the Shoal Lake Aqueduct. This project will extend the life of the aqueduct by 50 years.

The Water and Waste Department consists of three distinct "utilities" - water, wastewater and solid waste disposal. The Wastewater Services Division is responsible for the collection, treatment and overall quality of wastewater discharged from the City's residential, commercial and industrial establishments. Wastewater Services also provides the City with land drainage and flood control services that entail the collection of runoff due to rainfall and operation/maintenance of sewer gates, pumping stations. This also includes sandbagging and primary and secondary dyke maintenance operations in times of flooding²⁴.

The Water Services Division is responsible for the provision of potable water to Winnipeg's residents. This division maintains the:

- watermains;
- service connections to residential, commercial and industrial establishments;
- water meters;
- fire hydrants; and
- water control valves²⁵.

2.6.1. Baseline and Trends

Owing to the scarcity and uneven distribution of water resources, the City of Winnipeg recognizes the need to conserve its freshwater supply as much as possible because Shoal Lake is currently the only source of potable water for the City of Winnipeg. Compared to

²⁴ Water and Waste, Department Information. July 2005,
<http://www.winnipeg.ca/waterandwaste/dept/overview.stm>

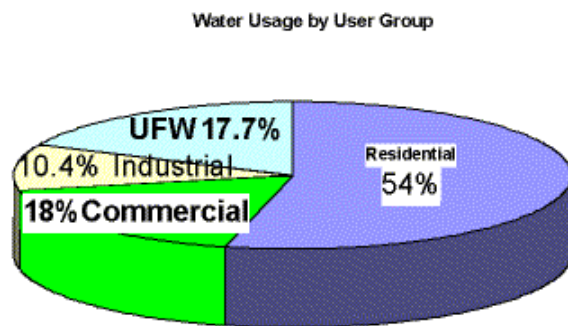
²⁵ Ibid

other Canadian cities, Winnipeg's per capita water consumption is comparatively lower.²⁶ In a survey of ten cities, Winnipeg's per capita consumption was similar to three cities (Regina, Edmonton, and London) and was significantly lower than seven others (Halifax, Windsor, Calgary, Ottawa, Vancouver, Toronto, and Montréal)

In global terms, however, Winnipeggers are still among the largest per-capita consumers of water in the world²⁷.

The City measures water use for three main categories: residential, commercial, and industrial consumers. Residential usage includes all dwellings such as single family homes, duplexes, and apartment buildings. Commercial users include businesses such as offices, retail, wholesale, and institutions such as schools, universities and hospitals. Industries, which are generally large users, include food and beverage processing, rail yards, and heavy industry.

Between 1998 and 2001, Winnipeg's water consumption was reduced by 27.5%. Consumption dropped from 300 megalitres per day (MLd) to 218 MLd per day. Based on this reduction in consumption, the City has scaled back water conservation programmes. *Sustainable Winnipeg* also contains conflicting information about water conservation programmes—indicating both a scaling down of water conservation programmes *and* a need for future conservation efforts.



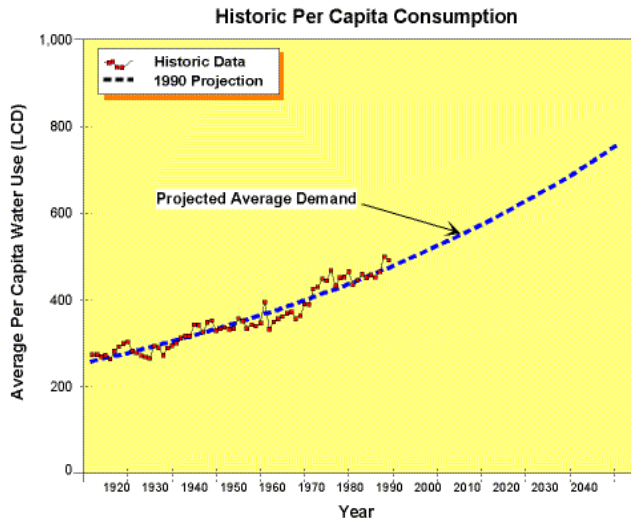
UFW - Unaccounted for Water

(Source: Winnipeg Water and Waste Department²⁸)

²⁶ City of Winnipeg, *Sustainable Winnipeg: A Comprehensive Environmental Strategy*, February 2004, http://www.winnipegcec.org/environmental_strategy/cec_sustainable_winnipeg

²⁷ City of Winnipeg, *Sustainable Winnipeg: A Comprehensive Environmental Strategy*, February 2004, http://www.winnipegcec.org/environmental_strategy/cec_sustainable_winnipeg

²⁸ Winnipeg Water and Waste Department, *How Winnipegger's Use Water, 2001*, <http://www.winnipeg.ca/waterandwaste/water/waterfront/startsite.htm>



(Source: Winnipeg Water and Waste Department²⁹)

Sustainable Winnipeg contains the following contradictions:

- Currently, the City has reduced water conservation programming, *while* also indicating that more water conservation programming is necessary to decrease future water consumption, and
- indicates that household water consumption levels are dropping, *while* also indicating that Winnipeg's water rate structure combines a quarterly fee and an inverted water rate where the fee *decreases* as consumption increases (International comparisons indicate that water rate structures that *increase* with consumption will encourage conservation)³⁰.

These seemingly contradictory directives may be partially explained by an updated water use projection survey undertaken by the City's Water Conservation Team in 1997. This survey indicated that water consumption levels were not going to be as high as originally anticipated. This scenario change was attributed to demographic and technological changes in residential water use. Specifically, greater use and availability of lower flow toilets and showerheads were cited as reducing per capita demand by up to 25%.³¹

The Water and Waste Department is responsible for maintaining and protecting a resource essential for life: water. Therefore, the department continuously responds to public concern around water quality and quantity.

Several failures in the City's wastewater system such as that in September 2002, which resulted in the discharge of raw sewage to the Red River at the rate of 185,000 cubic metres per day over a period of 57 hours, have increased public concern over Winnipeg's wastewater treatment and water safety in general.

²⁹ Winnipeg Water and Waste Department, Per Capita Water Consumption, 2001, <http://www.winnipeg.ca/waterandwaste/water/waterfront/startsite.htm>

³⁰ City of Winnipeg, Sustainable Winnipeg: A Comprehensive Environmental Strategy, February 2004, http://www.winnipegcec.org/environmental_strategy/cec_sustainable_winnipeg

³¹ Winnipeg Water and Waste Department, What We've Done So Far...Evaluation Activities, 2000

Currently the Water and Waste Department are improving infrastructure in response to the 2002 raw sewage spill. The City has water conservation programming in place, such as “Slow the Flow” and has also participated in development of the Shoal Lake Watershed Management Plan, a water quality protection strategy.

Data from the “Slow the Flow” program is collected in a manner which requires further data refinement; therefore, it is difficult to determine the impact of this water conservation program on overall water consumption levels.

The Water and Waste Department also collect monthly water consumption by household to develop yearly and time of year water use trends. This information falls under the privacy act as it contains personal information—therefore; it is not available for public use.

Neighbourhood Data Availability

Currently, data for the “Slow the Flow” program is captured in a way that does not allow for easy comparison or for comparisons of program use by neighbourhood. Data is collected by the number of students participating in the program at Fort Whyte and by individual teacher’s name—therefore, this information is difficult to access (privacy considerations) and would take another level of data analysis to make the data useful for neighbourhood comparisons. In addition, data for participation in the residential “Slow the Flow” program is collected by household address and cannot be accessed due to privacy legislation. There is no data collection on water conservation activities at the neighborhood level.

2.6.2. Existing and Recommended Community-Oriented Programmes

The following is a list of the programs and descriptions offered by the City of Winnipeg related to Water Conservation:

- **Flood control** is an educational service that provides information on overland and basement flooding, operation and maintenance of land drainage sewers/flood gates/flood pumping stations, and design/construction and maintenance of dikes.

- **Wastewater sewer connection repair granting** is a service that provides technical assessment and financial assistance for repair of house sewer service connections.
- **Water pipe private service thawing** is a service that provides the recollection of unwanted private water pipes.
- **Water system hydraulic consultation** is a public service offered to premise owners, sprinkler system designers, insurance companies, and consulting engineers that provides hydraulic performance data for a specific location in the water distribution system.
- **Septic tank and field permits licensing** is a service that provides permission and inspection of private wastewater disposal systems to ensure compliance with sewer bylaw 7070/97. Also providing advice to residents and contractors as well as dealing with failed systems.
- **Wastewater industrial service** is a service that includes monitoring for and generation of overstrength wastewater surcharges and the assistance to industry in efforts to reduce industrial wastewater and toxic hazardous discharges.
- **Water production and distribution** is a service offered to the residents of Winnipeg that provides the supply, storage, treatment, pumping, distribution and metering of potable water.
- **Slow the Flow** is a program which targets teachers of middle school aged children and provides curriculum enrichment education, experiments, and activities around water conservation and may request in-house presentations. In addition, participating classrooms receive a quarterly Slow the Flow newsletter.
- **Home Water Conservation Kits** are available in both a standard kit (\$10.74) plus tax and a deluxe home water kit (12.98) plus tax. Both kits contain the same water conservation devices, with the deluxe kit containing an early closure toilet flapper rather than a toilet dam as found in the standard kit.
- **Lawn Watering Tips** are offered online by the Water and Waste Department and provide information on time of day, amounts, and how to determine if your lawn needs to be watered.
- **Tips for Around the Yard** include information on rain water collection, watering practices, and determining whether you need to water.
- **How Much Water Does Your Family Use** is an online water calculator that households can use to estimate their water consumption.

In 1992, the City and Fort Whyte entered an environmental education partnership.³²The City's Water and Waste Department have an ongoing programme delivery partnership with the Fort Whyte Centre. Fort Whyte administers the Slow the Flow program on a day to day basis by providing participating middle years school teachers with curriculum updates, water conservation activities and experiments, and copies of Liquid Assets, the quarterly newsletter associated with the program. In addition, a Water Education Coordinator from Fort Whyte can be requested to do school presentations.

³² City of Winnipeg Water and Waste Department, School Programs: Lessons in Conservation, 2000, <http://www.winnipeg.ca/waterandwaste/water/waterfront/startsite.htm>

The Home Water Conservation kits are available by directly calling the Water and Waste Department. Currently, the Water and Waste Department deliver all other water and waste related programmes.

2.6.3. Potential Contribution of EIZs

According to *Sustainable Winnipeg*, the City of Winnipeg could help to foster sustainable behaviour among its citizens and within its communities by considering the following options:

- Promoting demand-side management of household water in conjunction with biodiversity education and incentives (for example, providing drought-tolerant prairie landscape design education and rebates on prairie plants);
- Empowering citizens and communities to develop water conservation plans and report on progress toward meeting community conservation efforts (for example, promoting the purchase of low-flow toilets and dual flush toilets);
- Continuing to empower communities and citizens to reduce their use of the sewage system (for example, encouraging the purchase of 6 litre ultra-low flush toilets and 3/6 litre dual flush toilets);
- Advising citizens to redirect their roof drains onto lawns and into rain barrels;
- Encouraging the development of “green rooftops” or “living rooftops” on existing and new flat roof buildings as a way to divert precipitation from the sewer system and as a way to encourage biodiversity in the urban area;
- Encouraging citizens and communities to decrease the concentration of pollutants in their wastewater;
- Providing information on proper disposal of Household Hazardous Waste;
- Providing citizens and communities with the resources to manage ecologically sensitive riverbank property;
- Developing education programs geared towards preventing the contamination of surface water runoff; and
- Continuing to work with community groups that are committed to restoring riparian areas.

A key component of EIZs in terms of water conservation programmes would be the integration of these programmes with other household programmes such as composting, recycling, and reducing energy consumption. EIZs would act as a key component in Community Based Social Marketing (CBSM) by communicating Winnipeg’s larger goal of sustainability. For many Winnipeggers, sustainability is a difficult concept to apply to their household or neighborhood, therefore, EIZs would create the link between the intangible (sustainability) and connect it with tangibles (various conservation programmes). EIZs would provide information, education, and create ongoing public awareness about continuing to lower consumption in community identified conservation priorities.

The current EnerGuide for Houses In-house evaluation does not include water conservation and focuses solely on energy conservation. As part of a holistic programme delivery system, EIZs could act as a linkage between the current delivery agents of the EnerGuide for Houses evaluation, Manitoba Hydro, and between Efficiency Manitoba, which is scheduled

to be viable in 2005 and will "...use a community based approach to integrate DSM for electricity, natural gas, water, waste, and transportation..."³³

2.7. Pesticides in the Urban Environment

Insecticides, larvicides, herbicides, and fungicides all fall into the general category of pesticides. Pesticides are toxic synthetic substances used to control and reduce the damage of bugs, insects, plant weed species, and nuisance fungus. Pesticide residue contaminates birds, fish, wildlife, domestic animals, livestock, and human beings. These substances can stay in the atmosphere indefinitely, and could be hazardous for future generations. In addition, research indicates that some pesticides may bioaccumulate and result in further health and environmental problems in the future.

Insecticides and larvicides are chemical substances designed to kill insects (insecticides) and insect larvae (larvicides). Mosquitoes, defoliating insects, and the elm bark beetle are currently the central focus of the City's insect control strategy. The City of Winnipeg's preferred method of mosquito control is Integrated Pest Management (IPM). The IPM approach includes the elimination of standing water, sanitation, and the use of larvicides³⁴.

Herbicides and fungicides are also in the pesticide family and are chemical substances designed to kill plants (herbicides) and fungi (fungicides). While some invasive species place a threat to the native species, many of the plants considered "pests" do not directly threaten the local species, but do impact the aesthetic ideal, namely weed free lawns in both public and private spaces.

In accordance with the Manitoba Noxious Weeds Act, the Integrated Pest Management Services Section of the Department of Public Works is mandated to reduce nuisance weeds to an acceptable level within the city. Manitoba Environment has been monitoring surface water in the province for pesticide residues since 1972. Levels of 2,4-D are slightly elevated in the Red River north of the City of Winnipeg, which might suggest over-use of this pesticide both within and outside the City of Winnipeg

There is a great deal of citizen concern surrounding potential health impacts of the use of chemical herbicides. Of particular worry is their use by individual homeowners. The landscaping industry has also indicated that it is necessary to re-evaluate the use of herbicides by the industry. The industry has stated that limiting their use to professional licensed applicators might have a real impact on any potential health risks³⁵.

The City of Winnipeg's Parks and Open Spaces Division provides the following services:

- provides a mowing program for minimizing weed seed production on vacant undeveloped property;

³³ Manitoba Energy, Science, and Technology, *Efficiency Manitoba*, <http://www.gov.mb.ca/est/pdfs/est-efficiencymanitoba.pdf>

³⁴ City of Winnipeg, *Sustainable Winnipeg: A Comprehensive Environmental Strategy*, February 2004, http://www.winnipegceec.org/environmental_strategy/cec_sustainable_winnipeg

³⁵ Ibid

- provides a spraying program for controlling broadleaf weeds in parks, boulevards and other green space;
- provides a weed inspection program that ensures provisions of the Manitoba Noxious Weeds Act and Boulevard By-Law are carried out; and
- liaise with Public Works Customer Service Division for the purpose of receiving public complaints and providing information.

The I.P.M. (Integrated Pest Management) Section is one of the sections in Centralized Park services of the Parks & Open Space Division, which in turn is one of the seven Divisions making up the Public Works Department. The I.P.M. section has three priority areas that it works in:

- **I.P.M. Field Operations - Spray Programs:** different weed control strategies are used depending on weed type and weed location. Timely mowing is employed by the Branch to prevent weeds from going to seed. Approximately 60% of the Branch's control program is accomplished by mowing.
- **Inner City Neighborhoods:** The I.P.M. Section works closely with community organizations in the inner city and various civic departments, especially the Planning, Property & Development Department, to maintain properties to an acceptable level. The purpose of maintaining inner city neighborhoods is to create aesthetically pleasing green space that will attract new residents and create civic pride in existing residents.
- **Naturalization of City Properties:** The I.P.M. Section has worked with the City Naturalist in the preparation and maintenance of the growing number of naturalized sites throughout the city. As well, I.P.M. has been working with the City Naturalist and the Purple Loosestrife Committee in the ongoing battle to control and eventually eradicate this extremely invasive plant along the city's waterways³⁶.

2.7.1. Baseline and Trends

Within the City of Winnipeg there has been increased public concern over mosquito fogging as a human comfort mechanism and now there is an increased public safety aspect to the fogging issue as concern about potential health risks such as West Nile virus come to the forefront.

Typically, 85% of the Insect Control Branch's operating budget is spent on mosquito larviciding. With the recent appearance of the West Nile virus, mosquitoes are increasingly viewed not only as a nuisance, but also as a health hazard. Balancing the needs of individuals susceptible to the West Nile virus with the needs of individuals sensitive to insecticides has become a complex issue³⁷.

In November 2002, the City of Winnipeg Civic Environmental Committee commissioned a poll. 89% of respondents indicated that they are supportive of civic investment in

³⁶ City of Winnipeg, Public Works, *Integrated Pest Management*, <http://www.winnipeg.ca/publicworks/Parks/WeedControl.asp>

³⁷ City of Winnipeg, *Sustainable Winnipeg: A Comprehensive Environmental Strategy*, February 2004, http://www.winnipegcec.org/environmental_strategy/cec_sustainable_winnipeg

environmentally friendly alternatives to chemical pesticides. In a separate question, 44% of those polled indicated that they are more concerned about pesticides now than they were two years ago.

This poll correlates with the current Canadian trend to move away from pesticide use. Halifax banned pesticides in both public and private properties and Montreal, Ottawa, and Toronto are also considering banning the use of pesticides.

The Parks and Open Spaces Division control approximately 60% of all weeds through mowing. And spend less than 1% of the City's IPM budget on weed control through herbicides.

The City of Winnipeg established the Weed Control Advisory Committee. This committee undertook a survey to explore public attitudes and practices relating to weed

Neighbourhood Data Availability

Neighbourhood data about pesticide use is unavailable because there is no means at present to determine what private households use in terms of pesticide use. Data about city use of pesticides at the neighbourhood level is inaccessible. Data about mosquito buffer zones can be accessed by calling the Bug Line, however, information is limited to if your house is located in a fogging buffer zone. Requests for data about pesticide use by the city or within the city are treated with suspicion, largely due, it can be assumed, to the highly contentious issue around mosquito fogging.

control. Survey findings were contrary to those of the Civic Environment Committee as this survey found that 53.7% of respondents used herbicides on their properties to control weeds and that over 95% of those who used lawn chemicals did so on an annual basis. 90% of respondents had not heard of Integrated Pest Management and 60.5% would not tolerate a significant increase in dandelions, even if this resulted from a reduction in the use of herbicides.³⁸ Public responses to this survey indicate that more work is required to educate the public about pesticide alternatives, changing the "golfer's lawn" aesthetic, and exposing the public to lawn alternatives such as butterfly gardens, zeriscapes, and native species planting.

2.7.2. Existing Community-Oriented Programmes

According to *Sustainable Winnipeg*, the City of Winnipeg could help to foster sustainable behaviour among its citizens and within its communities by considering the following options:

- Empowering citizens and communities by providing programmes and educational support to help them reduce and, eventually, eliminate insecticides, larvicides, herbicides, and fungicides from use on private property;

³⁸City of Winnipeg, *Sustainable Winnipeg: A Comprehensive Environmental Strategy*, February 2004, http://www.winnipegcec.org/environmental_strategy/cec_sustainable_winnipeg

- Working towards the elimination of pesticides from privately owned properties; and
- Encouraging the use of residential attached screened porches and detached screened enclosures as a safe and effective method of mosquito protection.
- Empowering citizens and communities by providing programmes and educational support to help them reduce and eventually eliminate herbicides and fungicides from private property;
- Educating citizens on the health impacts of pesticides;
- Educating the public on organic pest control methods and cultural practices that can be used to reduce pest habitat and deter pests; and
- Educating the public on organic weed control methods and cultural practices that can be used to reduce weed species.
- Educating citizens about weed tolerance and encouraging the use of native species that attract beneficial insects.

Currently, the Public Works Department's Naturalist Services Branch supports many Stewardship Groups throughout the city. There are approximately 24 groups working in many neighborhoods on initiatives ranging from "Save our Seine" to the "Bishop Grandin Greenway". Groups are composed of community based volunteers. Environmental Improvement Zones could be used to provide further education around alternatives to pesticides to these pre-existing groups and could also be used to foster community based initiatives around pesticide reduction.

The Parks and Open Space Division currently has partnerships with the General Council of Winnipeg, Community Centres, Athletic Field Maintenance Program, various Friends groups, and the Coalition to Save the Elms³⁹.

The Parks and Open Space Division also have community orientated programs that include:

- **Adopt-A-Park Program**: Community groups, or private households can assist in enhancing their local green space.
- **Perennial Plants Donation Program**: Individual households can "give back" to the city by providing their perennials as part of the City's move to use more perennials.
- **Naturalization in Winnipeg**: The division is working to return areas to a state of naturalization.⁴⁰

EIZs could be utilized to further communicate the City's vision of more naturalized green space as well as helping motivate neighborhoods to adopt their local green space as active learning sites (areas where educational programmes around composting, pesticide alternatives, etc.) could be posted and hosted. Groups already involved in Stewardship activities could act as EIZ anchor groups and host existing programs such as the City's unique Perennial Donation Program and could expand it to include donating perennials not

³⁹ City of Winnipeg, Public Works, Parks and Open Space Division, *Park Services*, <http://www.winnipeg.ca/publicworks/parks/Services.asp>

⁴⁰ City of Winnipeg, Public Works, Parks and Open Space Division, *Park Programs*, <http://www.winnipeg.ca/publicworks/Parks/Programs.asp>

just to the City, but also around the neighborhood and/or to neighborhood institutions that may wish to increase their outdoors aesthetic.

There are also several non-governmental organizations that deliver pesticide alternatives in the form of educational programmes and workshops. The Manitoba Eco-Network delivers organic lawn care workshops as well as grasscycling workshops. The City has undertaken several initiatives in regards to pesticides. The City has a customer service line, better signage at spray sites, and has cosponsored public workshops on organic lawn care. In response to public concern over pesticide use on City property, the City established the Weed Control Advisory Committee which made recommendations to create an annual public education campaign around IPM and secondly, around pesticide reduction⁴¹.

2.7.3. Potential Contribution of EIZs

To prevent mosquito fogging, Winnipeg residents can request to have a buffer zone placed around their house. There are buffer zones around 950 homes across the city. Each home that requests to be exempt gets a 100m buffer zone around their house. It is not possible to get a map of buffer zone distribution in the city due to privacy laws. However, if a resident calls the Bugline, they can find out whether or not their house is in a buffer zone.

The city of Winnipeg and the Province of Manitoba jointly piloted a community based initiative called TEAAM in 2003. Students randomly selected houses across the city to conduct a yard audit and provide helpful tips to reduce mosquito breeding grounds. A city employee indicated that residents are generally receptive to the initiative and are open to suggestions on how to reduce standing water sites in their yards.

EIZs could potentially be used to further the TEAAM initiative. EIZs could be used to create and deliver neighbourhood level education around standing water. In addition, EIZs could be used to develop the standing water audits, to be delivered alone in neighbourhoods or EIZs could be used to integrate the standing water audit with water conservation audits to reach households about water issues.

In general, Winnipeg's mosquito fogging issue is very contentious. The issue arrives every year with the first mosquito and has yet to be resolved to the satisfaction of either those groups/neighbourhoods for fogging or for those opposed to fogging. Because the mosquito fogging issue has some clear neighbourhood boundaries, EIZs could be instrumental in developing an integrated pest management system that relies less on pesticides and more on various alternate environmentally friendly choices such as removing standing water, dragonflies, pest education, etc. EIZs could market an integrated pest management system (IPM) to neighbourhoods that have the most issues around fogging in addition to educating neighbourhoods that are less concerned about fogging about alternatives to chemical use in pest management.

The use of herbicides within City limits is generally used to maintain the "golfer's green" lawn aesthetic, which is a lawn without weed species such as couch grass and dandelions. EIZs could be used to educate neighbourhoods about alternatives to lawns (native species

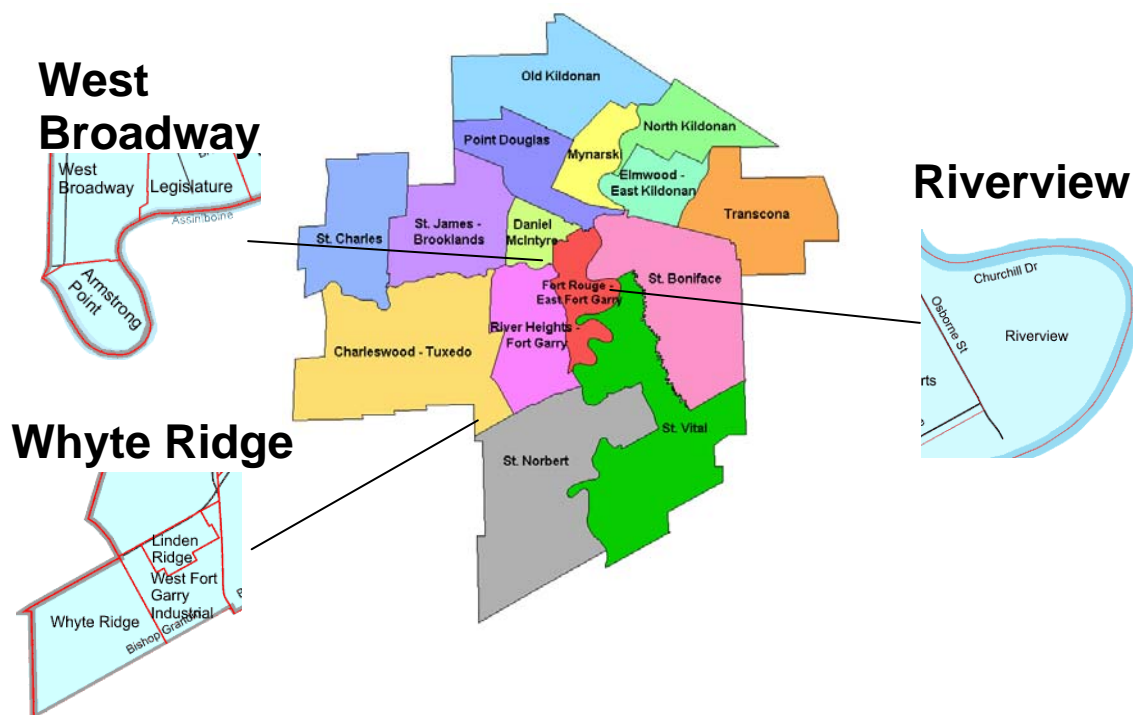
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planting) and alternatives to using herbicides for lawn care maintenance. EIZs could also be used to educate neighbourhood anchor groups such as schools, hospitals, golf courses, universities, colleges, and businesses to develop a holistic lawn care system that is pesticide free that would be in keeping with neighbourhood values. In addition, EIZs could also be used as a mechanism to integrate existing programming such as the Eco-Network's organic lawn care and grasscycling programmes into a neighbourhood delivery system.

3. Pilot Results

Winnipeg is not a homogenous entity and social/economic/environmental issues vary from neighbourhood to neighbourhood. However, quite frequently funding programs are not designed to take the unique needs of a neighbourhood into consideration. Based on other models we have looked at, we believe there is considerable merit in approaching civic environmental issues from a neighbourhood perspective. We selected three neighbourhoods because they represent a range of socio-economic profiles, are both urban and suburban, are older and newer neighbourhoods, had strong community resources we could access readily, can be compared using some simple sustainability indicators, and the specific members of the project team have connections that draws them to one or another of the neighbourhoods.

The three areas selected to conduct the Environmental Improvement Zones pilot were Riverview, Whyte Ridge, and West Broadway.



3.1. Whyte Ridge

Whyte Ridge was chosen to be a part of the EZ zone pilot project because of its unique location and characteristics. The community is located in suburban Winnipeg, away from the downtown and close to Fort Whyte Centre.

3.1.1. Community Profile

Whyte Ridge is a relatively new community and therefore does not have to deal with the problems associated with older neighbourhoods, for example, housing renewal. The neighbourhood has no designated environmental committee; however it is not for a lack of community involvement. Residents are actively involved in organizing and participating in local activities and report a strong sense of community.

Population

Whyte Ridge is a thriving community nestled in Southwest Winnipeg. Since 1986, over 2200 families have relocated to Whyte Ridge, making it one of Winnipeg's most sought after communities. Whyte Ridge differentiates itself from other suburban neighbourhoods with its two man-made lakes, over 60 acres of parkland and thousands of trees. It is deemed to be an ideal location to raise children: lots of green space and yet a short drive away from all the amenities Winnipeg has to offer.

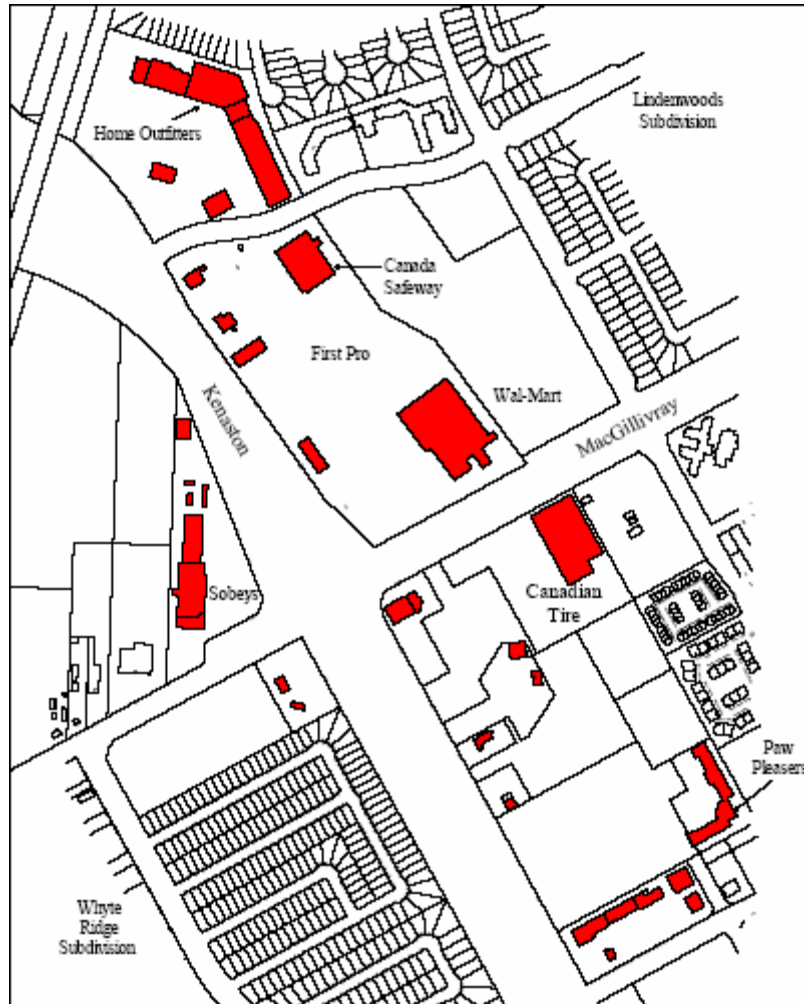
In addition to its physical characteristics, Whyte Ridge differs from other Winnipeg neighbourhoods in terms of population composition and characteristics. In 2001, there were 6395 people living in the Whyte Ridge neighbourhood which is located on a 2.87 square kilometer plot of land. Whyte Ridge has a reputation for being an ideal suburban neighbourhood for the upper-middle class to raise their families. It is one of the wealthiest neighbourhoods in Winnipeg with a median household income that is double the median household income for the city of Winnipeg as a whole. It also has one of the highest levels of educational attainment in the city, 35.8 per cent of people over the age of 20 have a Bachelor's degree or higher.

Commercial Development

The Whyte Ridge community was originally planned as a residential area that would include three levels of density. The original development plan states *"the community and each neighbourhood will accommodate diversity of housing types within the three levels of density. It will be an environment where variety is welcome and monotony of physical form is avoided"*. There were also plans for a small commercial centre at the heart of the neighbourhood that was to be accessible by foot, and large enough to meet local consumer needs. Whyte Ridge veered from the original development concept and consists almost exclusively of single family dwellings with only a dozen semi-detached dwellings. There is no neighbourhood centre surrounded by high density homes and small scale commercial activity. Instead, there is large scale commercial development situated just outside of the neighbourhood that is not easily accessible by foot due to the amount of traffic, lack of sidewalks and distance between stores⁴².

⁴² "At the First Pro power centre on Kenaston, a walk from Wal-Mart at the south end of the centre to Home-Outfitters at the north end is about 640 meters. An even greater distance of 1.4 kilometers separates businesses at the extreme south end of the neighbouring Linden Ridge development (e.g. Paw Pleasers) from those at the

Site Plan of Retail Development at Kenaston and McGillivray



(Source: Lorch, 2004)

The area surrounding Whyte Ridge is different from what surrounds other residential neighbourhoods in Winnipeg. On one side of the community, at the corner of McGillivray and Kenaston, is a commercial development area. Wal-Mart, Canadian Tire and Safeway are some of the big box stores that have recently opened; in addition, there are numerous other small businesses and restaurants in the area.

The area was designed with the assumption that everyone owns, and can operate, an automobile. There are limited sidewalks for walking and limited paved shoulders for bus stops. Long distances between stores and poorly designed bus stops make the commercial development automobile friendly while being less pedestrian or even cyclist friendly. These

extreme north end of the First Pro centre (e.g. Marks Work Wearhouse and Tommy Hilfiger)” (Lorch, 2004, p 26).

limitations have not hindered the economic activity of the cluster of stores as it is one of the busiest commercial areas in the city of Winnipeg.

Residential Development

On the other side of Whyte Ridge is a residential zone that has yet to be developed. Plans are underway to develop the area, but as of 2004, it remains open land. The City of Winnipeg conducted a ‘sensitive lands plan’ of the area to assess the area before further development. The results of the study have yet to be made available to our research group.

Transportation

Transportation is an important environmental issue in Whyte Ridge. Whyte Ridge was built by the typical suburban planner with the mindset that everyone would own a car. It is not the physical distance between stores that is the problem; it is that the stores are almost inaccessible by foot and/or bike as there are no sidewalks or paved shoulders. There are also limited sidewalks within the community itself. Some residents have not seen this to be a problem as it is safe for children to walk along the edge of the road.

A new section of the Trans Canada Trail links the Fort Whyte Centre to the Whyte Ridge Community making it more convenient for residents to use active transportation between the two destinations. Because the trail does not yet extend through Winnipeg, it does not help pedestrians and cyclists wanting to travel into the city centre.

The primary mode of transportation for residents 15 and over who are employed in the labour force is the automobile, 85.7 percent. This is significantly higher than the overall city of Winnipeg statistic which is 68.5 percent. In addition, for the City of Winnipeg, the percentage of people who either walk or bicycle is 7.9 percent whereas in Whyte Ridge, the percentage is 2.4.

Modes of Transportation in Whyte Ridge

MODE OF TRANSPORTATION	WHYTE RIDGE			CITY OF WINNIPEG
	Male	Female	% of Total	% of Total
15 and over, employed labour force ¹				
Car, truck, van, as driver	1,550	1,230	85.7%	68.5%
Public transit	75	65	4.3%	14.2%
Car, truck, van, as passenger	90	130	6.8%	8.5%
Walk	15	35	1.5%	6.4%
Bicycle	20	10	0.9%	1.5%
Taxicab	0	0	0.0%	0.2%
Motorcycle	0	0	0.0%	0.1%
Other method	10	15	0.8%	0.6%

(Source: 2001 Winnipeg Census)

The community is serviced by public transportation, Routes 81 and 84, however ridership is very low compared to ridership levels on routes in the downtown area. It is difficult and costly to serve suburban developments such as Whyte Ridge, thereby making the car a faster, and therefore more desirable, form of transportation. The popular use of the automobile in this community could potentially become a problem as the approximately 1900 residents

under the age of 14 become legal to drive⁴³. The increasing number of licensed drivers will likely have a large impact on local roads.

Community Activism

Residents of Whyte Ridge are active in their community. While there is no association that deals specifically with environment issues, there are a couple of groups that residents can present their environmental concerns to. The Westridge Community Club holds open-house events in which community members can voice their community related concerns. At the most recent open-house, a few members of the community voiced concerns about illegal dumping in the vacant land behind Whyte Ridge. The Board of Directors has contacted city officials and the police about the problem. The problem is seen to be temporary until the land is developed and residents move in.

Another active group in community is the Whyte Ridge Residents Association. The association organizes community events and acts as a liaison between the community and local government.

There are two schools in Whyte Ridge, Whyte Ridge Elementary School and Henry G. Izatt Middle School. Each school has a Parents Association that deals with issues concerning the school. At Henry G. Izatt Middle School, an environmental club was started by a group of motivated Grade 6 students who want to create a greener school yard. Hopefully this group of students can inspire other students to join in community based environmental activities.

Fort Whyte Centre

Another unique aspect of the Whyte Ridge community is its close proximity to the Fort Whyte Centre. Fort Whyte Centre is a year round, not-for-profit outdoor education and recreation facility. The centre provides tours, hikes, workshops and information to community members, school groups and corporate groups. This unique combination of woodlands, grasslands, wetlands and lakes provide an excellent opportunity for the community to learn about the natural environment.

The Whyte Ridge neighbourhood now has an additional opportunity to enjoy their local environment as EarthShare Agricultural Co-op relocated to the Fort Whyte Centre in March 2004. EarthShare began planting organic fruits and vegetables in April 2004. Produce is distributed to members and sold at local farmers markets and at Fort Whyte. The farm is operated by co-op members and new members are always welcome. Being in close proximity to locally grown organic produce should help entice Whyte Ridge residents to support the co-op either by becoming members or by purchasing fruits and vegetables from the Fort Whyte Centre.

3.1.2. Environmental Concerns and Priorities

An environmental aspect unique to Whyte Ridge is the migration of the Canada geese. The neighbourhood is on the natural migration path of hundreds of thousands of Canadian geese that migrate south for the winter. In the fall, approximately 10 000 geese land at Fort Whyte

⁴³ Whyte Ridge youth under the age of 14 represent 29.8% of the total Whyte Ridge population.
<http://www.winnipeg.ca/census/2001/>

every night with the number expected to rise to 25 000 geese around Thanksgiving. Many Winnipeg residents come to the centre to see the geese landing at night. In addition to being a spectacular site, the geese are also seen as a nuisance by some Whyte Ridge residents. Geese take over parks and school playgrounds making them dirty and undesirable places to play. Residents complain about the abundance of geese in the spring and fall but they believe there is little action they can take because Whyte Ridge is on the natural migration path.

Another environmental concern is the lack of garbage cans in the community. There are a couple of garbage cans located in the parks but there are none on the streets. This is a problem because children like to go to the gas bar/convenience store located at the entrance of the subdivision and purchase drinks and candy. Because there are no garbage cans on their way back home, garbage is thrown on the street. Littering is a problem that can be solved by community action and one way to do so is to get garbage cans placed along the streets.

3.1.3. Workshop Results

The Whyte Ridge EZ Zone workshop was held at Henry G. Izatt Middle School on November 24th 2004. The workshop was attended by 6 adults and 1 youth. The participants included a combination of local residents and people who work in Whyte Ridge but reside outside the area. Despite the small turn out, participants actively participated in the activities and discussion.

The first activity of the evening was having participants fill out a questionnaire. The questionnaire consisted of 18 environmental based questions about Whyte Ridge. Participants were asked to answer each question, based on their personal opinion, on a scale of 1 to 5 with 1 being the lowest and five being the highest. The questions and average responses can be seen in Box 1.

Box 1. Responses to Questionnaire

Question	Average Response
How would you rate the current environmental conditions in Whyte Ridge?	3.3
How would you rate the current environmental conditions in Winnipeg?	2.8
The environment in Whyte Ridge affects my feelings about my neighbourhood.	4.4
Is healthy, fresh food available in your neighbourhood at affordable prices?	3.0
Is healthy, affordable housing available in your neighbourhood?	3.5
Is transit easily accessible in your neighbourhood?	2.0
Are you concerned about pesticide use in Whyte Ridge?	3.1
Are you concerned about mosquito spraying in Whyte Ridge?	2.9
Is air pollution a neighbourhood concern for you?	3.4

Is noise pollution (e.g., jets, automobile traffic, etc) a neighbourhood concern for you?	2.8
Is water quality a neighbourhood concern for you?	2.6
How important is reducing energy consumption in your daily life to you?	3.8
How important is reducing water consumption to your daily life?	3.9
Do you feel that your way of living and your habits are positively or negatively impacting the environment in Whyte Ridge?	3.8
How would you rate the amount of public green space available to you in Whyte Ridge?	3.7

Citizens do identify with and care about their neighbourhoods —as indicated by the high ranking given to the question “the environment in Whyte Ridge affects my feelings about my neighborhood” (4.4 being the average response on the scale of 1 to 5). Is transit easily accessible in your neighbourhood was given the lowest score out of all the questions, 2.0 indicating that respondents did not feel that they had accessible mass transit in Whyte Ridge. The limited transit access is borne out by the design of the neighbourhood; there are only two bus routes which have stops located in less convenient locations. The neighborhood’s design is based on the assumption that all residents would have access to a vehicle.

All other responses to the questions were mid-range, indicating that the current environmental conditions within Whyte Ridge are not extremely satisfying, nor are they extremely dissatisfactory.

One question asked participants if they had personally participated in improving the Whyte Ridge’s environment. Only one person responded that yes, they had participated in improving the environment. The remaining respondents all answered that they had not previously participated in improving the environment because they had not had the opportunity to do so. This lack of opportunity reflects the area’s lack of structured environmental organizations. Many of the residents feel that they are environmentally conscious and feel that there are some environmental issues within the neighborhood that could be addressed; however, there are no community environmental groups other than the Grade Six Environmental Club at Henry G. Izatt Middle School.

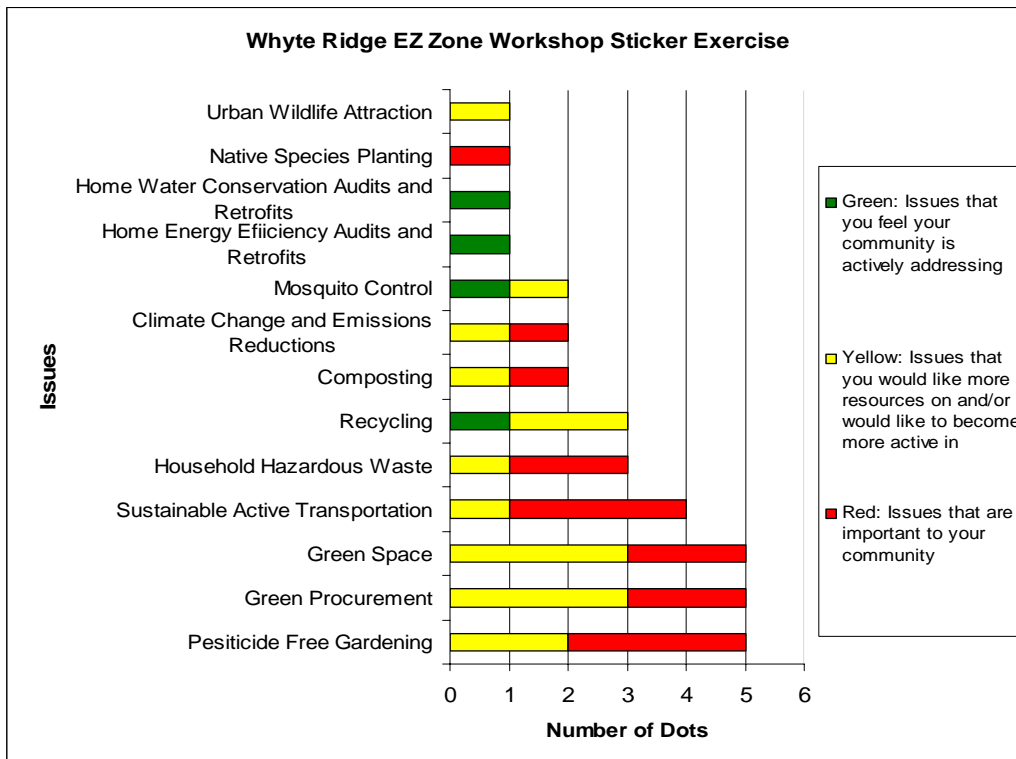
For the second activity, participants were asked to participate in a modified Delphi group consensus exercise. The goal of the activity is to come up with several priority areas by having individual participants individually rank the provided issues. In this way, it is hoped that two to three issues will rise to the top. After each person ranks the issues, discussion ensues to come to a consensus on which is the most pressing priority which needs to be dealt with. Each person can also provide input into why they chose or did not choose to rank certain priorities. This discussion helps provide insight into neighborhood perceptions. Each person was provided with several colored stickers, with each color numerically coded so that the four colors were ranked one to four, with four being the lowest priority and one being the highest priority. Individuals were asked to pin each of their stickers to whichever issues they felt were priorities.

The environmental issues were chosen by the researchers involved on the EI Zone pilot project and were based on a prior literature review. The list was not exhaustive and some of the issues found in each of the literature reviews of the three neighborhoods may or may not be relevant to each community. In addition to providing the group with a selection on environmental priorities, the group was invited to add any priority that they felt was missing from the list the researchers had constructed.

Figure 1 shows the number of dots placed by each issue. Participants could put more than one dot on an issue they felt strongly about. It is impossible to compare how people in Whyte Ridge feel about an issue compared to how strongly people in West Broadway and Riverview feel about an issue. This is because a different number of people attended the three community workshops and there was no limit on the number of stickers a person could put on an issue (in a Delphi approach, individuals are only provided with a set number of stickers). However, no one in the three workshops put more than three stickers on a single issue. The activity does show which issues are relevant to each community. The exercise identifies issues that are important to community members and which issues they would be likely get involved in if the opportunity arose.

Further facilitation is required once the modified or full Delphi approach is completed. The facilitation focuses on developing an action plan around the main priority based on community input, strengths, and barriers. In this way, the community is not left with only identifying their environmental issues, but they also have a starting point to cohesively act around, if they choose to follow through.

Figure 1



In addition to asking participants to ‘dot’ each issue, they were also asked to write down a list of issues that are important to Whyte Ridge, which may not have been adequately covered in the initial exercise or which needed further clarification. The issues mentioned are listed in Box 2. There was a strong support for issues involving youth in environmental education, develop activities for children, and creating a teenager gathering space. While these issues may not have obvious links to the environment, it was indicated that teenagers often use an area around the wetlands for various activities and it was felt that litter and leavings by the teenagers was impacting the area. Creating active transportation options was also identified by the community. These issues reiterated what was mentioned in the Whyte Ridge community profile. Community members are aware that there is a lack of transportation options for the growing number of youth and soon to be licensed drivers. There was also talk of taking greater advantage of having the Trans Canada trail in their backyard.

There were also several other issues that were brought to our attention that were not mentioned in the community profile. Many of the trees along Scurfield Blvd. are infected with blight as a result of city tree trimmers not properly cleaning their sheers. Residents also complained that there was too much fertilizer being used on lawns.

Box 2. Environmental Issues and Concerns

The following is a list of some issues and concerns raised at the Whyte Ridge EZ Zone Workshop

Youth

- Making sure the schools and school children are involved in local environmental initiatives
- Find ways to get students actively participating in environmental initiatives
- Need more programs to engage the growing number of children age 13-17
- Need local places for teens to ‘hang out’
- Green space at HGI Middle School needs to be enhanced

Transportation

- Lack of active transportation routes, more are needed
- Increasing traffic flow
- Take advantage of having the Tran Canada trail pass through the area

Other

- Litter around railway tracks
- Trees infected with Blight
- Too much fertilizer used on lawns
- Quality of water in retention lakes
- Lack of biodiversity

One participant mentioned that one way to get Whyte Ridge residents involved in local environmental initiatives is to involve the schools because parents in the community are eager to support the interests and extra-curricular pursuits of their children. One participant attended the workshop as a show of support for her daughter’s environmental interests and would not have attended if her daughter had not shown an interest.

Participants also indicated that they would like to see the school partnering more with the Fort Whyte Centre around various environmental education opportunities. Participants

indicated that the Fort Whyte Centre represents a “great opportunity” that they currently are not taking advantage of. The Fort Whyte Centre is an environmental educational facility that features a 28 hectare bison enclosure and has Manitoba’s largest indoor aquarium. The Centre also has numerous bike paths, waterfowl gardens, and is a favorite with birders as it is on the migration path for thousands of bird species.

3.2. Riverview

Riverview was chosen to be a part of the EZ zone pilot project because of its location, demographic composition, and strong community spirit. Riverview is a well-established, urban neighbourhood located approximately four kilometres south of downtown Winnipeg. Riverview is often referred to as “Osborne South” as it sits just south of Osborne Village and has numerous shops and amenities within walking distance.

3.2.1. Community Profile

The neighbourhood of Riverview was first settled in the early part of 1900. Its two largest periods of development occurred pre-1946 and 1946 to 1960. Riverview is fully developed with regards to available housing lots as the physical boundaries of the area prevent further expansion of development. However, housing stock is constantly being renewed through homeowner improvements and some replacement of existing structures. There is a good mix of high-density housing and single family homes in the area. Single-family residences vary in style depending on the era they were constructed.

All in all, Riverview is an attractive neighbourhood featuring streets lined with mature trees; numerous parks, playgrounds, trails and natural areas; excellent access to transit; schools within walking distance; a vibrant community club and active social groups; community gardens; and shops and services within walking distance.

While there is no designated environmental committee operating in the neighbourhood, there is an exceptional level of environmental/sustainable development capacity to be found in the neighbourhood. This expertise and commitment to environmental issues has contributed to initiatives like the Friends of Churchill Parkway Re-naturalization Project, the Riverview Community Gardens, and current re-naturalization plans for École Riverview.

Population

Riverview is a vibrant neighbourhood that is part of the larger Fort Rouge area of south-central Winnipeg. According to the most recent census data available from the City of Winnipeg (compiled by Statistics Canada in 2001) the population of Riverview is 4350. The population density per square kilometre is 1780; over three times the City average. Since 1971 Riverview has seen its population decline by about 25 percent. This is likely the result of a generational shift to smaller sized families.

Over 66 per cent of Riverview residents 20 years and over have attended or completed degree/diploma programs at post-secondary institutions. In fact, the number of university graduates is 15 percent higher than the City average. The average income for the area is slightly higher than the City average, and approximately 60 percent of residents are employed in “white collar” sectors of the economy. Overall, employment rates for the neighbourhood closely mirror the civic average.

Riverview has a long-held reputation as a quiet, safe neighbourhood ideally suited for raising a family. Population by age of the neighbourhood is very similar to the citywide averages for all age groups.

Riverview Population by Age

POPULATION BY AGE	RIVERVIEW			CITY OF WINNIPEG
	Age Group	Male	Female	%
0-4	110	140	5.8%	5.9%
5-9	145	95	5.5%	6.6%
10-14	130	120	5.8%	6.6%
15-19	100	100	4.6%	6.6%
20-24	110	165	6.3%	7.2%
25-29	165	150	7.2%	7.0%
30-34	175	165	7.8%	7.0%
35-39	205	170	8.6%	8.2%
40-44	150	200	8.1%	8.2%
45-49	190	190	8.7%	7.7%
50-54	155	150	7.0%	6.9%
55-59	90	130	5.1%	4.9%
60-64	65	90	3.6%	3.9%
65-74	145	175	7.4%	7.0%
75+	125	245	8.5%	6.3%
TOTAL	2,060	2,285	100.0%	100.0%

(Source: 2001 Winnipeg Census)

Commercial/Institutional Development

Riverview business and commercial interests are represented by the South Osborne Biz Association. The association promotes local businesses and supports initiatives like street beautification and the summer farmer's market.

One of the anchor institutions in Riverview is the Riverview Health Centre. It is a 388 rehabilitation and long-term health care facility that has had a presence in Riverview since 1911. From 1911 to 1993 the facilities were known as the Winnipeg Municipal Hospital. Three main buildings made up the Winnipeg Municipal Hospital: the King Edward Memorial Hospital (1911), the King George Hospital (1914), and the Princess Elizabeth Hospital (1950). The hospital first specialized in treating communicable disease and as the incidence of those diseases declined it began to focus on care for the elderly. In 1993, the facility became known as the Riverview Health Centre and in 1995 the King Edward Municipal and King George Hospitals were demolished and construction began on a new complex. As noted in the section on Riverview Community Gardens, the Municipal Hospitals used to use the garden space the community gardens now occupy to grow produce for all municipal hospitals in the city.



Residential Development

Relatively few new homes have been constructed in the Riverview area in the last decade. While some housing stock has been replaced, residents are more intent on restoration,

renovation and upgrading of existing housing stock. Several older three-story apartment buildings located on Osborne Street Maplewood and Bartlett Avenues have recently undergone extensive renovations.

nsportation

Riverview is located along a central transit corridor (Osborne Street), giving residents easy access to Winnipeg Transit routes 16 and 58 Express. Riverview is also serviced by feeder route 95, which runs every 15 minutes during peak demand times and every half hour in lower demand times. Residents also have access to river pedestrian/cycle paths that will take them downtown or to the Forks or to the bicycle trail that joins Pembina Avenue all the way to the University of Manitoba.

Riverview is very pedestrian friendly. The majority of streets in the neighbourhood feature sidewalks. The elementary school encourages parents to walk their children to the school.

As the table below illustrates Riverview residents rely on motor vehicles slightly less than the Winnipeg average, are above average users of public transit, and cycle more than the average. Walking among those 15 years and over is below the city average, but this does not take into account the number of elementary and junior high students walking to and from school.

Modes of Transportation in Riverview

MODE OF TRANSPORTATION	RIVERVIEW			CITY OF WINNIPEG
	Male	Female	% of Total	% of Total
15 and over, employed labour force ¹				
Car, truck, van, as driver	855	675	66.5%	68.5%
Public transit	155	235	17.0%	14.2%
Car, truck, van, as passenger	45	120	7.2%	8.5%
Walk	55	75	5.7%	6.4%
Bicycle	40	25	2.8%	1.5%
Taxicab	0	0	0.0%	0.2%
Motorcycle	10	0	0.4%	0.1%
Other method	0	10	0.4%	0.6%

¹ Employed labour force with a usual place of work or no fixed workplace address.

(Source: 2001 Winnipeg Census)

Cars still remain the primary mode of transportation for the majority of Riverview residents, however the fact that so many essential community services (shopping, library, schools, and recreation facilities) are within walking distance means that Riverview residents are not forced to use their vehicles for every errand or occasion. There are also numerous area restaurants reflecting a wide price range, in addition to several used book stores, and a small Salvation Army Goodwill Store.

Community Activism

The Riverview Community Centre is the focal point for a great amount of community communication, activity and socializing. It publishes a well-written newsletter, the Riverview Reflector, which offers articles on a range of community issues including environmental concerns and lifestyle choices (for example vegetarianism). An offshoot of the Riverview Reflector is the South Osborne Bugle, an email based newsletter that delivers community

information more frequently to a subscriber-based audience (the Reflector is delivered to every home in Riverview).

There are numerous residents of the area who work or volunteer for organizations involved in promoting environmental and sustainable development concerns. It is likely that many of these individuals settled in the area because they recognized the sustainable characteristics of the neighbourhood.

Churchill Parkway

The Friends of Churchill Parkway project was established to protect Winnipeg's Churchill Drive parkway forest against further damage or intrusions; restoring the vegetation along the parkway and increasing public awareness of the importance of healthy streams. The project has included hands-on stream rehabilitation and monitoring opportunities for the community. The project has had provincial Green Team workers employed in the control of invasive species, beaver damage control, and a test project to stabilize the erosion-affected banks along this stretch of the Red River.

Riverview Community Garden

The Riverview community gardens are located between the raised berm of Churchill Drive and the Red River within Churchill Drive Park. Its location on the depositing side of the river's bend and its situation in close elevation with the river's water level has long made it a fertile site for the property owners across the road and the pioneers who settled the land as primary agricultural land. Since urbanization, the land has been planted with vegetables and a greenhouse was maintained by the city's hospitals. The work was done by inmates driven in from Headingley provincial penitentiary, providing a portion of the food for all of Winnipeg's municipal hospitals. In the early 1970's, the municipal hospitals were sold to the Manitoba Health Commission who left the lands that the gardens occupy to the city, who quickly leased the property to the Riverview Community Garden group. (University of Manitoba Faculty of Architecture, Urban Agriculture: Community Gardens, http://www.arch.umanitoba.ca/vanvliet/greenmap/pages/GrnMp_comgardens/pages/gardenriverview.html).

3.2.2. Environmental Concerns and Priorities

Like all communities in Winnipeg, Riverview should be concerned about its overall ecological footprint. Older housing stock in the neighbourhood could improve energy efficiency through the Manitoba Hydro EnerGuide for Houses In-House Evaluation and various grant programs. Composting could be promoted throughout the neighbourhood to significantly reduce the volume of waste sent to the Brady Road Landfill.

A significant number of residents band trees to prevent insect infestation and assist in the maintenance of the trees in the neighbourhood, but boulevard trees in the area require a higher degree of care than the City is currently providing.

Chemical lawn care usage is common throughout the neighbourhood. However, public areas like the community centre fields seem to have moved away from using chemical weed controls. Programs to educate about chemical free lawn care and gardening might contribute to an increase in organic lawn and garden care.

École Riverview is in the planning stages of a schoolyard re-naturalization program. This project offers many positive educational benefits to the students and other users of the schoolyard.

The issues listed above are a small sampling of environmental priorities residents in the neighbourhood considered during the workshop.

3.2.3. Workshop Results

The Riverview EZ Zone workshop was held at the Riverview Community Club on November 30th, 2004. The workshop was attended by 9 adults, although 17 residents had indicated they would attend. Participants were all area residents. The session featured a lively discussion and it was obvious the participants have a genuine concern for the environmental health of their neighbourhood. Discussion topics included organic lawn care, mosquito fogging, lawn alternatives (butterfly gardens, zeriscaping).

The first activity of the evening was having participants fill out a questionnaire. The questionnaire consisted of 18 environmental based questions about Riverview. Participants were asked to answer each question, based on their personal opinion, on a scale of 1 to 5 with 1 being the lowest and five being the highest. The questions and average responses can be seen in Box 1.

Box 1. Responses to Questionnaire

Question	Average Response
How would you rate the current environmental conditions in Riverview?	3.4
How would you rate the current environmental conditions in Winnipeg?	2.3
The environment in Riverview affects my feelings about my neighbourhood.	4.4
Is healthy, fresh food available in your neighbourhood at affordable prices?	3.2
Is healthy, affordable housing available in your neighbourhood?	3.3
Is transit easily accessible in your neighbourhood?	4.0
Are you concerned about pesticide use in Riverview?	4.3
Are you concerned about mosquito spraying in Riverview?	3.9
Is air pollution a neighbourhood concern for you?	3.0
Is noise pollution (e.g., jets, automobile traffic, etc) a neighbourhood concern for you?	2.2
Is water quality a neighbourhood concern for you?	3.9

How important is reducing energy consumption in your daily life to you?	4.4
How important is reducing water consumption to your daily life?	3.2
Do you feel that your way of living and your habits are positively or negatively impacting the environment in Riverview?	3.3
How would you rate the amount of public green space available to you in Riverview?	3.6

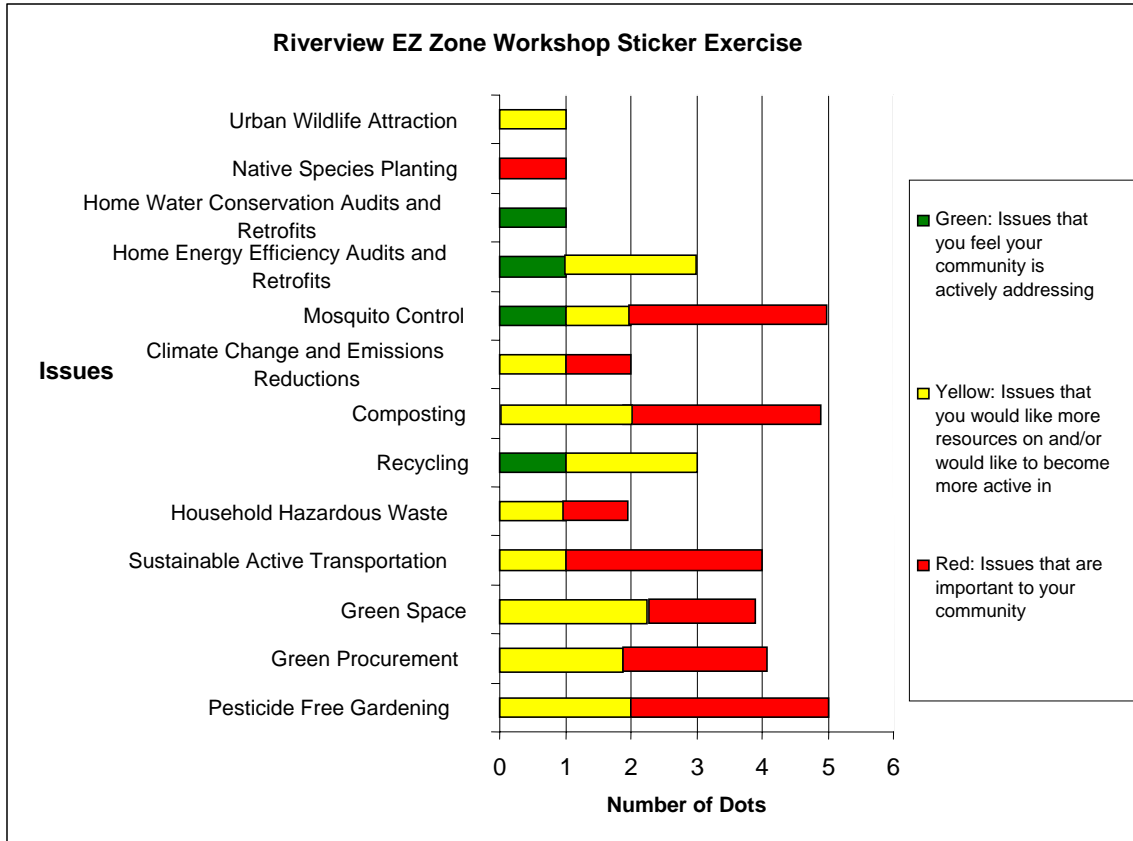
One question on the questionnaire asked participants if they had participated in improving the environment in Riverview. All nine participants responded that yes, they had participated in improving the environment.

Overall, responses to all questions were average to good (2.5 and above), with 2.2 being the lowest ranking given. Respondents indicated that neighborhood noise pollution from traffic was an issue. This response does reflect the fact that this neighborhood is situated on Osborne Street, a main artery north to the downtown, south to St. Vital, and west on Jubilee to access Pembina Highway. Both reducing energy consumption and “the environment in Riverview affects my feelings about my neighborhood” were given a 4.4 out of 5. The high rating for reducing energy consumption was reflected in action—in 2005 Riverview became part of an ongoing “Smart Meter” program from Manitoba Hydro. The program installs a meter which monitors energy consumption and requires that the household purchase credits that reflect units of energy. In addition, the strong correlation between the environment and personal feelings about the neighborhood was also similar to responses from Whyte Ridge and West Broadway, with both of these communities also ranking the local environment as an important factor that affects an individual’s feelings about their neighborhood.

The second activity used a modified Delphi approach (please refer to section 3.1.3 for further methodological details). Participants were asked to place a colour coded sticker next to a list of environmental issues. The environmental issues were chosen by the researchers involved on the EZ Zone pilot project. Participants were also provided with time to add any issues that they felt were important in their community, but were not represented by the list of issues the researchers presented.

Figure 1 shows the number of dots placed by each issue. Participants could put more than one dot on an issue they felt strongly about. It is impossible to compare how people in Riverview feel about an issue compared to how strongly people in West Broadway and Whyte Ridge feel about an issue. This is because a different number of people attended the three community workshops and there was no limit on the number of stickers a person could put on an issue (no one in the three workshops put more than three stickers on a single issue). The activity does show which issues are relevant to the Riverview community. The point of this exercise is to get a sense of which issues are important to community members and which issues they would be likely to get involved in if the opportunity arose.

Figure 1



In addition to asking participants to ‘dot’ each issue, they were also asked to write down a list of issues that are important to Riverview. The issues mentioned are listed in Box 2. The issues listed below clearly reflected many of the priorities mentioned in the Riverview community profile. This neighbourhood possesses a significant level of capacity to discuss and implement initiatives related to improving the environment of the area.

Box 2. Environmental Issues and Concerns

The following is a list of some issues and concerns raised at the Riverview EZ Zone Workshop

Transportation

- Would like to see improved transit shelters at busy transfer points (Osborne and Morley)
- A car share cooperative program would help reduce CO2 emissions in the community
- Lack of bike trail and public transportation on west side of Osborne

Pesticide Free Gardening

- Reduce level of chemical herbicides and fertilizers used by homeowners through effective education program

Composting

- Use a composting program to return biomass to the soil and reduce waste going to landfill

Other

- Riverbank erosion

- Household hazardous waste
- Home energy efficiency

3.3. West Broadway

West Broadway was chosen to be a part of the EZ zone pilot project because of its unique location, characteristics, and community activism. West Broadway is located in the heart of Winnipeg.

3.3.1. Community Profile

West Broadway covers 0.67 square kilometres of Winnipeg, or represents 0.1 percent of Winnipeg's land area (Winnipeg square kilometres is 464.1). This tiny area of Winnipeg has seen many changes. West Broadway is bounded by Balmoral Street and the Assiniboine River on the south-east side, Broadway to the north, and Sherbrook Street to the west.

West Broadway is a mature neighbourhood that has witnessed many changes both within Winnipeg and also within the neighbourhood. West Broadway residents have strong community pride and continue to actively improve their neighbourhood. The neighbourhood has strongly developed associations and groups such as the West Broadway Development Corporation, multiple residents' associations, food clubs, and business associations. Many of these organizations are related to the question of housing, namely affordable, low cost housing, however other neighbourhood concerns such as the environment may be overlooked or undervalued in the pursuit of better low cost housing.

In earlier years, West Broadway was an elite neighbourhood catering to the needs of the upper middle income to upper income groups, with many religious and cultural institutions such as the All Saints Anglican Church, built in the 1800's, Osborne Stadium (1932), and the Winnipeg Amphitheatre (1909) which provided for leisure and religious gatherings. In addition, the historical Granite Curling Club is also located in West Broadway. While only the Anglican Church and Curling Club exist today, the majority of the private residences and apartment blocks built at the turn of the century still exist.

This type of cyclical boom and bust has continued in the neighbourhood and is reflected in property values, crime rates, community spirit, levels of building maintenance, and other factors. Many of the private residences in West Broadway are large and stately and were the homes of businesspeople, doctors, lawyers, judges, and other city officials in the early days of Winnipeg. West Broadway also is home to several early Frank Lloyd Wright buildings, again indicative of the area's past wealth and present heritage.

Population

West Broadway's diversity is based on income, education level, lifestyle, age, and housing opportunities. West Broadway has a higher than average incidence of low income among its residents, which is partly due to the high immigrant population residing in West Broadway. West Broadway is a cultural panorama and includes peoples from many backgrounds including many First Nation groups (Cree, Montagnais-Naskapi, Ojibway, Inuktitut, Micmac, Kutchin-Gwich'in (Loucheux) and other nationalities as well: Chinese, German, Spanish, Italian, Dutch, Polish, Arabic, Tagalog (Filipino), Ukrainian, Punjabi, Non verbal languages, Portuguese, Greek, Hindi, Russian, Japanese, Hungarian, Creole, and Norwegian. It should

be noted that First Nations compose 27.8% of West Broadway’s population as opposed to the rest of Winnipeg (7.1%).

In terms of income levels within the neighbourhood, the low income levels as compared to the rest of Winnipeg may have a negative impact on people’s ability to afford energy efficiency improvements. According to City of Winnipeg (2001), the average household incomes in West Broadway for 2000 were less than half of the City average.

Table 2: Average household incomes

Household income in 2000	West Broadway average	Winnipeg average
Average household income	\$20,923	\$53,176
Median household income	\$16,085	\$43,383

(Source: City of Winnipeg, 2001)

While the majority of income in West Broadway is generated through employment, West Broadway has approximately twice the rate of government transfer payments in the form of employment assistance and other assistance. While the residents of West Broadway generally have lower incomes than the rest of Winnipeg, there is also a higher incidence of low income families and households in the West Broadway compared to the City of Winnipeg average.

Commercial Development

West Broadway has many independently owned businesses located on its main thoroughfare, Broadway. Business activities span a range of services and price levels, from pawnshops and eclectic gift shops to pricier specialty restaurants and hair salons. Broadway is anchored by a funeral home on its north-west corner and the community centre and the Klinik located on its south east and north west corners respectively. There are also a range of medical services that make Broadway their home, including a dentist, chiropractor, First Nation’s Healing Centre, and the Klinik. In addition, there are churches, restaurants, clothing stores, pawn shops, local food stores and a credit union within the bounds of West Broadway.

Residential Development

Housing, the lack of housing, housing options, housing quality, etc. are critical issues in West Broadway. West Broadway has consistently had a high proportion of apartment buildings. Built around the turn of the century, many of these same apartment buildings are still actively used for housing (rooming houses, apartments) today. However, the upscale elegance once found in many of the blocks has suffered from lack of owner investment and are in major need of repairs. Places such as St. Elmo Apartments retain its architectural detail, but suffers from a lack of repair, both interior and exterior.

The average purchase cost of a house in West Broadway rose slightly from \$29,027 in 1998 to \$32, 971 in 2003 (Morier, Erica, May 13, 2003). In 1998, the housing prices in West Broadway were the second lowest of approximately sixty areas in Winnipeg (Winnipeg Real Estate Board, 1999). Prices in the area have continued in a modest flux — dropping to an average of \$23,752 in 1999, rising to an average re-sale price of \$28,522 in 2000, and again rising modestly to \$32,971 in 2003 (Winnipeg Real Estate Board, 2001, Morier, 2003).

West Broadway is primarily home to rental properties with “absentee landlords”. 93.8% of the properties in West Broadway are rental with the remainder, 6.2% of housing being privately owned (City of Winnipeg, 2001).

Table 1: Dwelling Tenure in West Broadway

Dwelling Tenure	Number	% of Total	Number	% of Total
Owned	190	6.2%	160,760	63.6%
Rented	2,875	93.8%	92,055	36.4%
TOTAL	3,065	100.0%	252,815	100.0%

(Source: City of Winnipeg, 2001)

Many residents and experts attribute this high rate of absentee ownership and their prevailing practices of low building investment to the high incidence of housing in need of minor and major repairs in West Broadway. West Broadway was designated a “Major Improvement Zone” and a “Rehabilitation Zone” by the City of Winnipeg.

Transportation:

West Broadway has excellent bus transportation with many stops on Broadway. Vehicle parking is limited on Broadway and the adjoining business streets. Many of the side streets have two hour parking restrictions. Car theft and vandalism is a concern in West Broadway.

Cyclists report that poorly maintained asphalt on the main artery, Broadway, makes it unsafe for cyclists to travel safely in traffic. There are no cyclist routes through West Broadway, with the closest cycling route being Westminster, which is closed to non-local vehicle access on weekends, dawn to dusk. Westminster is located in the adjoining neighbourhood, Wolseley.

West Broadway has several main arteries, Broadway running east/west connecting to Osborne Street and Sherbrook, which runs south. (Maryland runs north and is just outside of West Broadway). Because Broadway provides access to Portage and Osborne and also to Maryland and Sherbrook, it is a heavily used artery during peak traffic flow times (morning and afternoon) and could be classified as having steady flow throughout the rest of the day.

Side streets off Broadway are characterized by having continual street parking, largely due to the fact that there are no large parking lots available for customers frequenting businesses. (There is a large parking lot across from Gordon Bell High School, but the lot is the private property of the funeral home). In addition, single family dwellings and apartments have to access their garages from the alleys and many residents choose to park on the street, rather than use the back alley to gain access to their parking, especially in nicer weather.

West Broadway is also located in the heart of Winnipeg and is in walking distance of the downtown and Osborne Village. Access to other bus routes that run to North Main, down Portage, and through Ellice are also accessible due to the proximity of West Broadway to the downtown.

Main Transportation Modes of West Broadway residents, aged fifteen years and older:

Mode	% for West Broadway	% for Winnipeg
Car, truck, van—as driver	31.7%	66.6%
Car, truck, van—as passenger	7.3%	9.2%
Public Transit	28.4%	15.5%
Walk to work	25.2%	6.4%
Bicycle	4.4%	1.5%
Other (includes motorcycle, taxi, etc.)	2.9%	0.9%

(Source: City of Winnipeg, Census Data, 2001)

The proximity of West Broadway and access to public transit is illustrated by the high percentage of people who use public transit and/or walk to work, as opposed to the rest of Winnipeg. In terms of driving to work, West Broadway residents use vehicles half as much as the rest of Winnipeg as their principle way to commute to work.

West Broadway has many local area initiatives which reflect many of the neighborhoods concerns. There are many initiatives around housing issues and neighborhood beautification. The following list represents some of the current initiatives within West Broadway:

- **Urban Green Team-** at West Broadway Development Corporation. Urban green team is a city funded initiative found throughout the city.
Purpose: To beautify and maintain the neighbourhood.
Other community initiatives the Green Team heads up:
 - o Graffiti removal (funded in part by the Business Improvement Zone (BIZ))
 - o Tree Banding
 - o Private property maintenance (tree pruning, grass cutting)

Groups/organisations located in West Broadway:

- Aboriginal Resident's Group
- West Broadway Neighbourhood Housing Resource Centre
- West Broadway Development Corporation
- MLA for area
- West Broadway/South Sherbrook BIZ
- West Broadway horticultural society
- Nine Circles Healing Centre
- Gordon Bell High School
- Community Police Detachment
- Good Food Club
- West Broadway Community Centre
- Art City

There are also many programs spearheaded by the West Broadway-South Sherbrook BIZ. Programs produced and sponsored by the BIZ are generally related to improving the aesthetics of the area in order to encourage/promote business activities within West Broadway. The following list provides an overview of BIZ initiatives:

- White lights program: A program to get burned out lights replaced. The BIZ is now working on a maintenance contract to insure the burned out light bulbs and broken wires are replaced every spring.
- Graffiti removal: The BIZ has been very vigilant with the control of graffiti in the area. One of the prime mandates for our summer BIZ Ambassador and the Urban Green Team is to insure that all graffiti is reported to the City of Winnipeg, Wipe out Graffiti program. They are also equipped with paint and graffiti removal spray to handle jobs within their capacity immediately.
- Store front incentive packages/rent subsidies: Provided by the BIZ to aid in economic development within the neighbourhood.
- Advertising program: Businesses can on a quarterly basis place a center page ad in the Metro One, Community Newspaper, reaching over 50 thousand homes. This ad promotes the area as a safe and vibrant place to live, work, shop and dine. Also features an alphabetical list of all the services in the zone with phone numbers.
- Newsletter: A newsletter is printed quarterly, updating members on the progress of the BIZ.
- Planting Program: Every summer the BIZ helps beautify West Broadway with hanging flower baskets, over flowing planters, and whiskey barrels splashed with color. The BIZ also funds maintenance of the plants throughout the summer.
- Streetscaping: Over the years, the BIZ has maintained the wrought iron work along Broadway and provided banners on prime intersections.
- Annual window washing: Every spring the BIZ hires a window washer to wash all street level windows of all businesses in the zone.

3.3.2. Environmental Concerns and Priorities

Environmental concerns in West Broadway center on housing and green space. There is a tension between the need for increased affordable housing and the need for (lack of) available green space (community members, 2004). This tension has limited documentation, and information about it is largely limited to individual comments. While the need for more housing options is clearly voiced by community members, recognition of the need for green space is also becoming apparent. One aspect of green space is the community gardens, which are used in West Broadway. To date, much of the community activism has been centered around improving affordable housing options of both private residences and multi-unit dwellings. The West Broadway Development Corporation has been a key stakeholder in improving local area housing.

Other environmental concerns in the neighbourhood include community gardens (West Broadway Horticultural Society). The community gardens are located on Sherbrook, Furby, Spirit Park, and at 152 Langside and 106 Langside. The community gardens are a valuable resource used by West Broadway residents; however, there is strong feeling among gardeners about their rights and use of the community garden space. In addition, there are strong feelings from non-gardener residents about the value of the community gardens.

The issues surrounding the community gardens is that they are not permanent, with three gardens on land loaned by the City of Winnipeg to the West Broadway Development Corporation and one on privately owned land. Within each of the gardens, the services provided by West Broadway are limited to repair and maintenance according to site

requirements. For example, the sites with structures and mechanical items (water) also have these maintained by West Broadway, while the other sites are limited to having grass cut, trees pruned, and dangerous debris cleared away (broken boards). At each of the sites the gardeners are responsible for the garden beds. Currently the model compost bins situated at the Sherbrook garden may be moved to Spirit Park. It is difficult to determine compost bins use levels as some residents feel that they are underused, while other residents indicate that the bins are being used to capacity (need more compost bins as current one is overflowing). West Broadway also maintains the grounds at the Klinik and will be developing an urban garden in the near future for food security. A potential environmental issue in the Sherbrook garden is heavy lead content in the soil. Anecdotal information supports this, but there is no scientific evidence to back this up at this point.

There is increased interest in organic produce by area residents. The interest in the availability and cost of organic foods in the neighbourhood is linked primarily to middle and upper income households moving into the area (related to housing gentrification phenomenon). However, interest in organic food supply is not limited to the aforesaid groups, but is also a concern of lower income and marginalized groups and is responded to within the community by the Good Food Club, which provides the option of healthy organic foods.

Some residents have commented that there is localized dust disturbance caused by City of Winnipeg sweepers during spring cleaning (in 2003, it was perceived that they did not use a lot of water when doing the street sweeping). Residents have commented that while the dust lasts a short time, it is the unpleasant odours that are equally difficult to endure. Some residents described the unpleasant odours as smelling of animal feces and a general “rotten” smell. While these last for only a few days, they are indicative of a larger issue—which is animal owners not picking up after their pets, improper garbage disposal, and lack of leaf raking.

Residents have indicated that along Balmoral Street, one of the larger companies uses pesticides on their lawns. Some residents have expressed concerns about this practice. There was no other commentary about pesticide use in any other areas of West Broadway.

West Broadway Development Corporation actively encourages local area residents to take advantage of their Dutch Elm Disease banding services on a “pay as you can” scale. While the program is actively advertised, program uptake is not as high as it could be. As an established neighbourhood, West Broadway has many Elm trees providing shade, habitat, and aesthetic value along many of West Broadway’s streets. Age of the trees, lack of banding and care of private trees may become a future environmental concern as large numbers of Elm trees die from disease. In addition, bird/squirrel habitat, shade properties, and the aesthetic value of the trees would also be lost.

West Broadway has many “auto dumpsters”, which are the larger multiple family steel bins used for duplexes, apartment blocks and areas that have limited garbage truck access. There are many neighbourhood concerns surrounding the disposal of large items such as couches and furniture around the dumpsters. Residents indicate that the auto dumpsters represent a fire hazard, provide food and shelter for rodents and make the neighbourhood look unsightly by having excess garbage overflowing out of them and having garbage picked up

from the wind and blown around. In addition, unpleasant odours attract flies in the summer time which decreases neighbourhood aesthetics. There is also a concern that neighbourhood individuals use the dumpsters to scrounge for food. However, residents also felt that dumpsters also have a positive influence in the neighbourhood by acting as a “recycling area” area where people can leave gently used household goods.

There are no endangered species in West Broadway and there is limited wildlife habitat. Because the area is highly urbanized, wildlife is limited to squirrels, house sparrows, and pigeons. Dogs and cats are non-wildlife animal residents in the neighbourhood.

3.3.3. Workshop Results

The West Broadway EZ Zone workshop was held at Crossways in Common on November 25th 2004. The workshop was attended by four adults. The participants were local residents who had a variety of backgrounds and interests including the West Broadway Horticultural Society, social/environmental activists, and local housing/low income needs representatives. While the turnout was small, the participants were knowledgeable, long time residents of West Broadway who shared their opinions and observations openly and frankly. In addition to the participants who attended the focus group, four other individuals emailed/telephoned the researcher and provided their feedback on local area issues. It should be noted that some of the individuals who called the researcher chose not to attend the focus group because of local tension between various individuals with varying visions of West Broadway. These four individuals’ comments are included in the commentary section.

The focus group was divided into four sections, a presentation, survey, modified Delphi rating exercise, and issue discussion. After a presentation overview of the EZ concept and introductions of all participants, a survey was completed which was followed by a rating exercise. The rating exercise was then used to generate further information about environmental issues that the participants felt were key.

At the beginning of the focus group, participants were asked to complete a questionnaire (Please see appendix for questionnaire). The questionnaire consisted of 18 environmental based questions about West Broadway and Winnipeg. The survey was designed to do two things: 1) Determine participant’s baseline perceptions of West Broadway’s current environmental conditions and 2) To contrast participant perceptions of their neighbourhood to the environmental conditions found in the rest of Winnipeg. Participants were asked to answer each question, based on their personal opinion, on a scale of 1 to 5 with 1 being the lowest priority and five being the highest priority. The questions and average responses can be seen below:

Responses to Questionnaire

Question	Average Response
1.) How would you rate the current environmental conditions in West Broadway?	2.5
2.) How would you rate the current environmental conditions in Winnipeg?	2.5
3.) The environment in West Broadway affects my feelings about my neighbourhood.	4.25

4.) Is healthy, fresh food available in your neighbourhood at affordable prices?	2.5
5.) Is healthy, affordable housing available in your neighbourhood?	3.0
6.) Is transit easily accessible in your neighbourhood?	4.75
7.) Are you concerned about pesticide use in West Broadway?	3.25
8.) Are you concerned about mosquito spraying in West Broadway?	4.0
9.) Is air pollution a neighbourhood concern for you?	4.25
10.) Is noise pollution (e.g., jets, automobile traffic, etc) a neighbourhood concern for you?	4.0
11.) Is water quality a neighbourhood concern for you?	4.0
12.) How important is reducing energy consumption to your daily life?	4.0
13.) How important is reducing water consumption to your daily life?	3.75
14.) Do you feel that your way of living and your habits are positively or negatively impacting the environment in West Broadway?	4.0
15.) How would you rate the amount of public green space available to you in West Broadway?	2.5
16.) What is your main transportation mode? (See below).	
17.) Have you ever participated in improving the environment in West Broadway? (See below for responses).	
18.) Which of the following activities would you like to participate in to improve the environment in West Broadway? (Check all that apply). (See below for responses).	

Question 16 asked what individuals main mode of transportation was. All participants indicated that walking was their main mode of transportation, while one individual also indicated that they take the bus and another individual also indicated that their bicycle was also their main mode of transportation (weather dependant).

Question 17 asked individuals if they had ever participated in improving the environment in West Broadway. All participants indicated that they had actively participated in improving West Broadway’s environment.

Question 18 asked what activities people would like to participate in to improve the environment in their neighbourhood. The following is a list of activities in rank order that participants indicated that they would like to participate in:

Number of participants interested	Activity
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in participating in	
3 out of 4	Recycle, lobby government for local improvements.
2 out of 4	Learn how to conserve water, plant flowers/trees, learn how to build better housing.
1 out of 4	Create more community gardens, compost, learn how to conserve energy.

- Three of the four participants indicated that they wanted to recycle and lobby government for local improvements.
- Two individuals indicated that they wanted to learn how to conserve water, plant trees/flowers, and learn how to build better housing.
- One individual wants to work to create more community gardens, compost, and learn how to conserve energy.

The survey also provided a space for comments, which are summarized below. Participants indicated that they were concerned about the amount of graffiti in the neighbourhood and the proliferation of garbage in the area both in overflowing dumpsters and on city property (sidewalks). Dumpster overflow was attributed to house reconstruction and furniture dumped from evicted tenants. One comment was phrased as a solution for the sidewalk garbage issue. A resident indicated that the City of Winnipeg should place recycling bins along West Broadway and in public spaces such as Spirit Park to encourage people to recycle. These bins are currently found in the downtown.

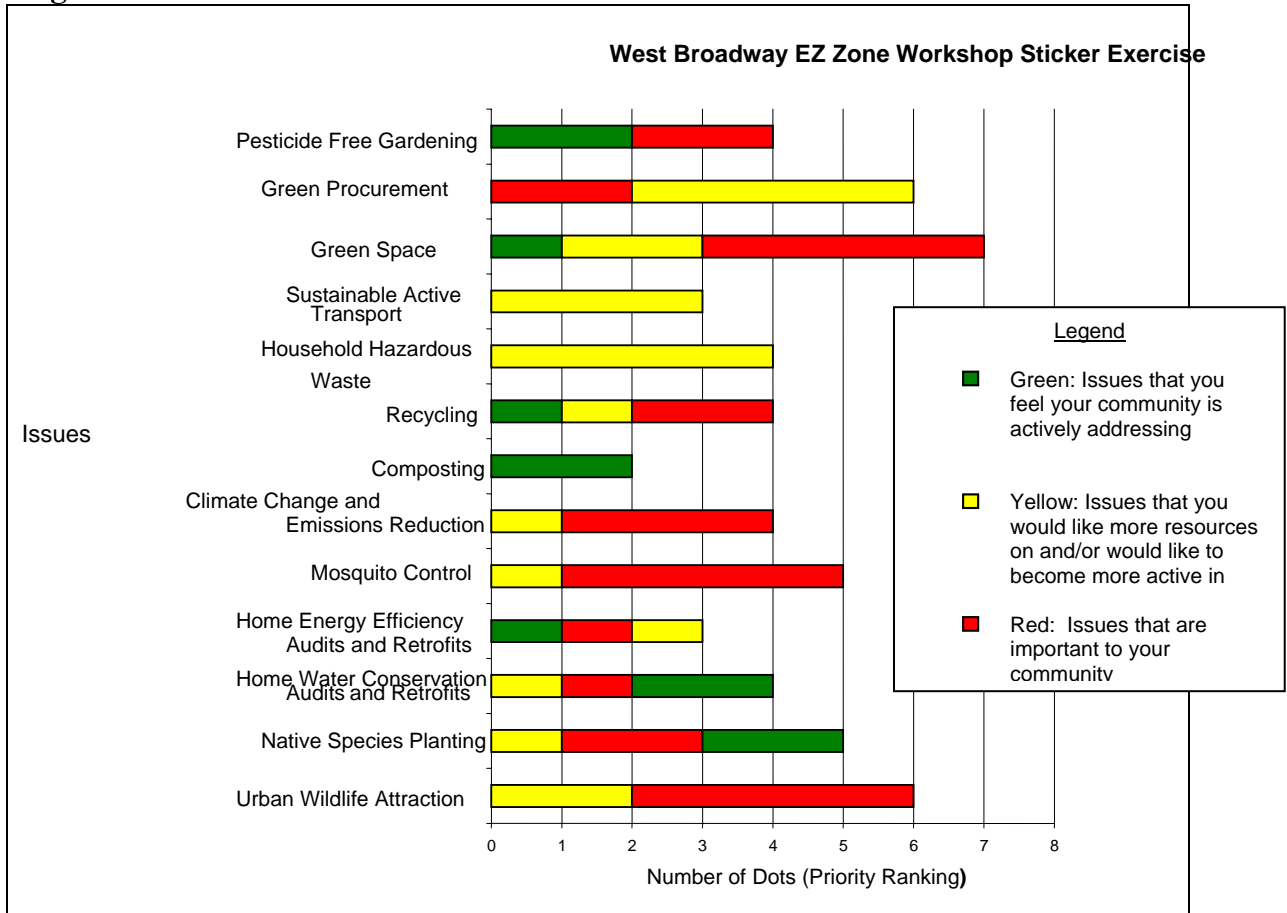
The amount of “through” traffic was also indicated as a neighbourhood concern. Individuals noted that heavy traffic usage on Thursdays and Fridays on the side streets of West Broadway represent a hazard. The comment about the traffic “through” issue was also discussed during the focus group as well. One participant noted that they sometimes wanted to carry a sign that said, “if you lived in West Broadway, you would be home by now”, in response to the traffic congestion that he witnesses along his street. Individuals also commented that they were concerned with excessive cutting down of mature trees and the “paving-over of earth which is eliminating grass, bushes, and trees.”

For the second section of the focus group, participants were asked to place a color coded sticker next to a list of environmental issues. The environmental issues were chosen based on prior research undertaken by the research team, which included a newspaper search of the Winnipeg Free Press for the years 2002-2004 to determine local issues. Because the literature review involved examining environmental issues in the three neighbourhoods (West Broadway, Whyte Ridge, and Riverview), not all of the environmental issues occur in all the neighborhoods and the degree to which the issues manifest in each of the neighbourhoods also varies.

Figure 1 shows the number of dots placed by each issue. The purpose of this modified Delphi exercise was to build on the survey responses. The survey provided the broad, general group of environmental categories and the second exercise (dot exercise) allowed participants to fine tune their environmental priorities.

Participants could put more than one dot on an issue they felt strongly about, though no individual put more than three dots next to an issue. The dot exercise allows individuals to indicate which areas are especially important to them and which issues are relevant to the West Broadway community. Please see figure one for a pictorial depiction of the environmental issues that individuals felt were important to West Broadway.

Figure 1



In addition to asking participants to ‘dot’ each issue, they were also asked to write down a list of issues that are important to West Broadway. These other issues are listed below. Several of the issues that participants mentioned dealt with issues that were not environmental in their scope.

In addition to the other issues that participants raised, they also indicated the need for “...integration of programmes into a larger picture and between one another” (Focus group participant, 2004). As indicated previously in the newspaper search of both the Winnipeg Free Press and The Broadcaster, housing issues and related issues such as gentrification and poverty reduction are critical issues that need to be incorporated into a holistic management plan for the area that includes both environmental and socio-economic considerations. In addition, the concerns of focus group participants also reflected some of the socio-economic statistics of West Broadway: higher crime rate, higher incidences of poverty and child

poverty, and a higher than city average of rental units. For participants, dealing with socio-economic issues is as important as dealing with the environment.

Box 2. Other Issues and Concerns

The following is a list of some issues and concerns raised at the West Broadway EZ Zone Workshop:

- The need for an organized approach to delay/stop gentrification within West Broadway “that people who are poor or who are on transfer payments are not forced to move away from their community because of rising costs of rental housing” (Focus group participant, 2004).
- Lack of recreational opportunities in West Broadway (no skating rink facility)
- High levels of child poverty
- “Environmental poverty” within West Broadway (lack of green space)
- The need for further waste reduction

Other Environmental concerns

- Litter around neighbourhood streets and side walks
- Dutch Elm Disease
- Too much fertilizer used on lawns
- Lack of biodiversity

The following section outlines the concerns and solutions that individuals voiced during the focus group. The concerns can be divided into the following categories:

- The lack of green space,
- Need for traffic management and,
- The need for more recycling (recycling spots, garbage disposal, construction waste, auto dumpsters),
- The need for improved housing (skills training), and
- Neighbourhood perceptions/solutions.

Urban Wildlife Commentary:

There was interest by focus group participants to attract urban wildlife such as birds or butterflies. With the current lack of green space, smaller wildlife such as birds and butterflies would be among the species that could be successfully drawn to smaller (lot) sized parcels of green space. It was indicated that there was an owl nesting at the University of Winnipeg and that participants felt that they could attract more birds to the area of West Broadway.

Participants indicated that more green space would be welcome and that there is currently inadequate green space in West Broadway. One participant indicated that the area needs more trees to act as a “carbon sink”. This connection between small scale activities—planting more trees and large scale issues—meeting Canada’s Kyoto commitment—should be encouraged wherever these linkages occur.

The loss of elm trees was also discussed. Participants felt that the tree species in the area were not diverse and that “all the trees are the same age, same species and they will all die at the same time” (Focus group participant, 2004). It was felt that more should be done to increase the biodiversity of tree species in the neighborhood and that the species should be local species adapted to the conditions found here.

Traffic Congestion Commentary:

West Broadway has excellent transit routes and Broadway is a traffic corridor that is often used to move from Portage Avenue to Osborne Street. In addition, Balmoral Hall private girl's school also creates traffic congestion in the morning and afternoon around the streets on Westminster Avenue and Balmoral Street. Focus group participants indicated that the neighbourhood of West Broadway is used as a "traffic corridor to go from point A to point B and that generally people do not stop in West Broadway" (Focus group participant, 2004). Participants indicated that they worry that these streets will get even more busy as more people discover the short cut to bypass using Portage Avenue.

Participants also indicated that the City of Winnipeg's subsidized Spirit of Downtown bus should go all the way down West Broadway (current route ends on east side of Osborne Street). As well, participants indicated that a bike route had been discussed approximately fifteen years ago, but nothing had become of it.

One particularly upset participant indicated that he sometimes wanted to walk down the traffic congested streets with a sign that said, "If you lived in West Broadway, you'd be home by now" (Focus group participant, 2004).

Recycling:

There is a need for more sidewalk recycling and garbage containers, especially on Broadway where there is a lot of foot traffic between the school, local businesses such as the Tim Horton's and the McDonalds on Portage Avenue. Participants indicated that while these businesses are just outside of the neighbourhood, they account for a lot of the wrappers and litter on the streets in West Broadway and should be accountable to the neighborhood.

In addition, the auto dumpsters were continually brought up as both a positive and negative neighborhood influence. The dumpsters were seen as "cleaning up the neighbourhood by providing an area for large amounts of waste to be dumped. Dumpsters were also seen as negative because people leave unwanted housing items for others—while participants liked the idea of people sharing other people's cast offs, they felt that leaving them by the dumpster was a fire and rodent hazard. A solution for this situation was discussed: participants felt that having a local space to run a "free store" would alleviate the need for people to leave goods by the dumpsters. A model for the "free store" was discussed. There is a "free/buy/sell store" in Brandon, Manitoba where new immigrants gained job skills, language skills, and item recognition skills by working at the store.

The dumpsters, because of their size, are also being used by outside construction companies to dump construction waste, which then fills the dumpster and precludes area residents from putting their waste into the dumpsters, which then causes further neighbourhood garbage problems. One resident indicated that he had called the City of Winnipeg about the construction companies dumping materials and was told that he would have to have a photograph of the truck dumping the items before they could be fined. This system puts the onus on the area residents to document the misdeed and bring the evidence to the City of Winnipeg. "If contractors dumped garbage at a school in Lindenwoods, they would be

charged. It's allowed and tolerated [in West Broadway] because we are a poor neighbourhood" (Focus group participant, 2004).

"If the community was clean, then people wouldn't litter as much" (Focus group participant, 2004).

Housing Issues:

While the focus group was discussing environmental concerns, the issue of inadequate, unaffordable housing (all rental units such as apartment suites) was discussed. The discussion around neighbourhood housing issues is in keeping with the newspaper findings and other research completed in the area of West Broadway. Participants indicated that many of the houses in West Broadway have been improved, however these improvements to the housing is causing it to rise in cost and impeding low income groups ability to access the housing. Participants indicated that long term residents are being forced to move away from the neighbourhood. The movement of long term residents out of the neighbourhood is felt to negatively affect "...the neighbourhood and is changing the feel of the neighbourhood" (Focus group participant). It was also indicated that some of the people who move away are the ones who are actively involved in working on West Broadway's environmental issues, therefore, the community loses a resource when people move.

It was also thought that having workshops about home repair would help local people learn how to do small home repairs. This type of workshop could also be developed into a skills training workshop for the local school (Gordon Bell High School).

Neighbourhood perceptions:

Focus group participants indicated that they felt that the neighbourhood was relatively well educated and "cosmopolitan", which is opposite of what the statistics indicate. Statistics indicate that West Broadway has a higher than average amount of transfer payments and poverty, and has lower educational achievement levels than the city as a whole. West Broadway is in fact deemed a Housing Improvement Zone by the City of Winnipeg and a Rehabilitation Zone (please see appendix for definitions). Therefore, West Broadway shares characteristics of the inner city. Focus group participants perceived that local residents were "environmental" because "these people aren't big consumers" (Focus group participant, 2004).

Participants indicated that local residents tend to bicycle, walk, and use transit as their main means of transportation. This perception is in line with other statistics and may be a function of proximity to the downtown and many transit connections, and may also be a function of being a smaller geographic area (neighbourhood covers less than one square kilometer). The transportation choices of West Broadway residents may also be a reflection of the socioeconomic conditions—individuals may not be able to afford to own a private vehicle.

The participants indicated that the following groups need to be "re-engaged" into helping to better West Broadway:

- Gordon Bell High School (while they are involved in the annual spring clean-up, it was felt that an education about litter program in combination with more sidewalk garbage bins would help alleviate the garbage issue).
- Balmoral Hall (currently not active in working with community)
- Local, large apartment owners (Dorchester Development, etc.)
- Tim Horton's and McDonalds (should also be involved because even though they are not part of the community their products end up littering the streets of West Broadway)
- City of Winnipeg needs to be further engaged in working with the area (more recycling bins, more sidewalk garbage bins—ensuring that they are also emptied, and helping solve the problem of contractors dumping into the auto dumpsters.)

4. Conclusions

Current planning models have tended to view neighbourhoods as homogenous and many of the currently deployed environmental programmes from the municipal, provincial, and federal governments are also developed with a “one size fits all” mindset. While these programmes are reaching many households, they are not reaching all groups and in some cases, are unable to indicate why they are not reaching these groups and may not even know which groups are not availing themselves of these programmes. Environmental Improvement Zones (EIZs) represent an opportunity to help revision/rescale large programmes into programmes and delivery systems that are unique to neighbourhoods and are able to better communicate sustainability in a language that the community knows, trusts, and will *act* on.

In many places around the world we are seeing that sustainable cities are built upon a foundation of sustainable neighbourhoods. There is a global movement to incorporate sustainability at the neighborhood scale in many cities around the world. Unfortunately, Canada lags on the global scale in terms of recognizing the importance of neighbourhood level governance for achieving sustainable development. Although Canada is a highly urban country (approx 80% of the population resides in urban areas) and has been predominantly so since the mid 1920s, it has paid little attention to neighbourhoods.⁴⁴ This may be due to the relatively small size of most municipalities⁴⁵ and to the lack of legal identity for cities in general.⁴⁶

⁴⁴ Sustainability Reporting Program. The Sustainability Report. “The Urbanization of Canada.” http://www.sustreport.org/signals/canpop_urb.html (30 May 2005)

⁴⁵ The Federation of Canadian Municipalities (FCM) is the primary association in the country for municipal government advocacy, funding and capacity building on timely issues, including sustainable development. Of the 1100 municipalities which were members in 2005, only 22 were members of the FCM's Big City Mayor's Caucus. Source: Federation of Canadian Municipalities. Annual Report 2004-2005. Ottawa, ON: FCM, 2005. <http://www.fcm.ca/english/about/ar2005.pdf> (7 July 2005)

⁴⁶ Canadian municipalities remain “creatures of the province” under the Constitution Act, 1867. The status of a city government and its legislative powers are important determinants of a city's ability to meet needs within its boundaries. A city's legislative toolkit helps or hinders the city's flexibility, creativity and nimbleness in solving problems in a rapidly changing environment. Source: Chief Administrative Officer, City of Toronto. “Comparison of powers and revenue sources of selected cities” Canadian Cities: Unleash Our Potential. http://www.canadascities.ca/caoreport_062000.htm October 2001 (7 July 2005)

As levels of sustainability planning and solution-building are shifting towards city-region frames of reference, there is a simultaneous growth in demand for more local units of decision-making and empowerment. We must recognize the strengths of sub-municipal units as engines of innovation – enabling society to live more sustainably.⁴⁷

For Winnipeg, Environmental Improvement Zones would require 1). A flexible and supportive institutional infrastructure, 2). Incorporating community based social marketing, and 3). Developing EIZs so that they naturally evolve to also include input into municipal environmental legislation and policy processes by residents.

Winnipeg has a well documented history of activism and organization at the community level and has experience integrating multi-level governmental sources of funding through a single window secretariat. EIZs are possible in Winnipeg. Winnipeg's pre-existing conditions of neighborhood focused programmes (Housing Improvement Zones, Business Improvement Zones, etc.), policy and legislation which allows Winnipeg to organize at a neighborhood level, and an active capacity base (existing NGOs, development corporations, and individual residents) positions Winnipeg to take advantage of implementing EIZs. However, Winnipeg's past municipal history and the more recent history around the C4 Communities⁴⁸ also reminds us that Winnipeg needs to develop flexible institutional infrastructure to allow neighborhood champions to emerge from many types of institutions, including development corporations, environmental groups, and citizen coalitions.

The move to develop and implement EIZs must be jointly supported by all involved levels of government and must be championed in all civic departments to help facilitate the initial growth of EIZs and to support the evolution of EIZs as they evolve to embrace more complex and integrated environmental issues. Support and an honest indication of what capacity the City has for using policy tools for environmental change will help with an easier implementation of EIZs; often, new planning tools are provided to groups, but they are often tasked with learning the boundaries of what the City and various departments are willing to do. Therefore, EIZs would act as a two-way conduit of information between neighborhoods and various City departments as EIZs work to remove neighborhood level barriers to environmental improvements and the overall sustainability of Winnipeg.

EIZs are also best positioned to utilize community-based social marketing (CBSM). Currently, many of the environmental campaigns involve short term education of individual households by non-community members. Various levels of government have developed “one size fits all” programmes that are then marketed to all sectors. While this type of guerrilla programming does provide quick results, it misses groups due to the programmes inability to respond to socio-economic, language, cultural, and other factors which make neighborhoods unique.

⁴⁷ Bradford, Neil. *Cities and Communities that Work: Innovative Practices, Enabling Policies*. Discussion Paper F32, Family Network. Ottawa, ON: Canadian Policy Research Networks, 2003. <http://www.urbancentre.utoronto.ca/pdfs/elibrary/CPRNcitieswork.pdf> (7 July 2005)

⁴⁸ See the companion document, “Environmental Improvement Zones Implementation Plan”, IISD, 2005.

As noted by Canada’s leading CBSM practitioner, Doug McKenzie-Mohr, “Community-based social marketing draws heavily on research in social psychology which indicates that initiatives to promote behavior change are often most effective when they are carried out at the *community level* and involve direct contact with people. The emergence of community-based social marketing over the last several years can be traced to a growing understanding that programs which rely heavily or exclusively on media advertising can be effective in creating public awareness and understanding of issues related to sustainability, but are limited in their ability to foster [long term] behavior change.”⁴⁹

Because EIZs are implemented at the neighborhood level, they would have a better understanding of local barriers, local interest levels, local priorities, community responses/understanding of environmental issues and would also be better at adapting and communicating larger scale solutions such as the One Tonne Challenge to conditions unique to the neighborhood. EIZs would also provide a new evaluation tool for the City of Winnipeg: EIZs would provide neighborhood-level data on various environmental programmes that could then be compared to various neighborhoods in Winnipeg and could be used to develop long term conservation strategies for making Winnipeg sustainable.

The smaller scale of EIZs would also improve feedback time—both positive and unforeseen results of programme implementation would become apparent far more quickly and therefore reaction times to improve any programme “hiccups” or oversights would be greatly improved. In addition, linkages of EIZs within the City could also provide for a new level of data analysis and therefore, programme analysis. EIZs and their respective demographics could be used to create better programs that would already receive some tailoring before being engaged in the EIZ. For the City of Winnipeg, EIZs and their function within neighborhoods would provide detailed data that, communicated to the federal government, would help support Winnipeg’s larger mandate of sustainability.

EIZs would build on the framework of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* and enable a partnership between multiple levels of government and city residents in achieving the second half of the vision it embraces:

*Winnipeg will become a model for community-based programming by providing citizens with educational programs, environmental outreach services and opportunities to participate in innovative environmental programs. Communities will develop local plans and work toward specific targets. Communities will be rewarded for their efforts to save energy, protect natural areas, dramatically reduce the use of pesticides and develop active transportation networks. Neighborhoods will develop as social and community hubs, becoming models for ecological community development and Smart Growth.*⁵⁰

As part of this vision, EIZs would play a role in notifying citizens about policy processes which impact their neighbourhood and provide them with information on how to become involved (e.g. secondary land use planning). In this way, EIZs would help Winnipeg’s

⁴⁹ McKenzie-Mohr, Doug. “Guide – Preface.” *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*. <http://www.cbsm.com/Chapters/preface.htm>

⁵⁰ Winnipeg Civic Environment Committee. *Sustainable Winnipeg: A Comprehensive Environmental Agenda*. Winnipeg, 2004. p. 7.

evolution of Smart Growth. Sub-municipal level institutions and processes are rising to fill the good governance gap. Researchers and practitioners are increasingly turning to neighbourhoods as a more appropriate level for some forms of decision-making. Neighbourhoods are the logical nexus for citizen engagement regarding urban policy development and decision making.⁵¹

Without an umbrella mechanism such as EIZs to assist neighbourhoods with implementing and integrating environmental programmes into their community, it is difficult for neighbourhood associations to maintain momentum. Laying a supportive base such as EIZs at the neighbourhood level will provide stability and continuity for both short and long term environmental change by having the community's fingerprint on every environmental decision and programme which enters its boundaries.

⁵¹ Infrastructure Canada – Research and Analysis Division. “Research Note: A Brief Review of Research on Neighbourhoods in Canada.” March 2005. http://www.infrastructure.gc.ca/research-recherche/rresul/rn/rn05_e.shtml (July 13, 2005)