Winnipeg

EMBRACING SUSTAINABILITY:

An Environmental Priority and Implementation Plan for the City of Winnipeg

2004 - 2006

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INTRODUCTION

On February 18, 2004, the Civic Environmental Committee (CEC) presented ***Sustainable Winnipeg: A Comprehensive Environmental Strategy*** to Executive Policy Committee. Building upon the policy foundation for environmental sustainability already established in ***Plan Winnipeg 2020 Vision***, the CEC report provided the civic organization with a comprehensive guide to ensuring Winnipeg's sustainability for years to come.

More than two years in the making, which included research, best practices analyses, and an extensive public consultation process, ***Sustainable Winnipeg*** identifies a series of key principles, establishes policy objectives in critical areas of environmental management, and offers numerous suggestions for strategic action in the future. In short, ***Sustainable Winnipeg*** represents a comprehensive "playbook" for developing a long-term action plan to promote a sustainable city.

In receiving ***Sustainable Winnipeg,*** Executive Policy Committee referred the document to the Chief Administrative Officer to develop a "Priority and Implementation Plan" that is consistent with the principles and policy objectives identified in the CEC report. In that sense, the primary objective of the priority plan was to develop an organizational "gameplan" out of the CEC's "playbook".

Embracing Sustainability: An Environmental Priority and Implementation Plan for the City of Winnipeg – 2004 to 2006 represents the City's environmental priorities over the next three years. Guided by the policy directives in Plan Winnipeg and following the advice and suggestions outlined in ***Sustainable Winnipeg***, ***Embracing Sustainability*** describes each of the environmental programs, services and projects that the City is either currently doing or is planning to do within the next three years.

In preparing this report, a number of observations were made and are worth articulating:

- Never before in the history of the City has the organization's environmental priorities been bundled together under one cover and it is to the enduring credit of the CEC and its report that the City has taken this significant step forward.
- The City is an organization that provides a vast range of environmental services that are designed to protect and enhance Winnipeg's sustainability.
- This report reflects a commitment to regularly re-examine environmental priorities and plans and to report on progress.

In encouraging the City to embrace sustainability, the CEC has provided the City with a context for recognizing our environmental strengths and weaknesses. More importantly, the CEC has prompted the City to develop a game plan for building a sustainable future for Winnipeggers.

Each chapter in this report aligns with the chapters of ***Sustainable Winnipeg.*** Each chapter includes an outline of the policy direction in Plan Winnipeg and a table summarizing current initiatives and their timelines. After each table, the initiatives are described in more detail.

Chapter One of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Decision Making and Management, including:

- Sustainable Governance and Corporate Management
- Fiscal Policy and Sustainable Budgeting
- Partnerships
- Environmental Education

Supportive Policy Direction can be found in the following sections of Plan Winnipeg:

- 5A-01 Promote Environmentally Responsible Decision-Making
- 2B-01 Commit to Sustainability
- 5A-05 Address Water, Air and Noise Pollution

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
1.1 ENVIRONMENTAL INITIATIVES MANAGEMENT STRUCTURE A proposed management structure will be recommended for implementation in 2004.	CAO SECRETARIAT	✓		
1.2 PLAN WINNIPEG REVIEW It is anticipated that this plan will evolve from the five-year review of Plan Winnipeg scheduled to commence in 2005.	PLANNING, PROPERTY & DEVELOPMENT		✓	
1.3 ENVIRONMENTAL PLANNING & PERFORMANCE REPORTING Environmental priorities, indicators and measures will be reviewed in 2005	ENVIRONMENTAL COORDINATOR		✓	
1.4 NEW DEAL Progress with this initiative is now dependent on revenue support from the senior levels of government	CAO SECRETARIAT	Ongoing		

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
1.5 ESTABLISHMENT OF THE PLANNING EXECUTIVE ADVISORY COMMITTEE (P.E.A.C.) Ongoing.	CAO SECRETARIAT	Ongoing		
1.6 PUBLIC EDUCATION – ASSINIBOINE FOREST This is an ongoing initiative.	PUBLIC WORKS	Ongoing		
1.7 PUBLIC EDUCATION – LIVING PRAIRIE MUSEUM This is an ongoing initiative.	PUBLIC WORKS	Ongoing		
1.8 PUBLIC EDUCATION – ZOO This is an ongoing initiative.	COMMUNITY SERVICES	Ongoing		
1.9 PUBLIC EDUCATION – LIVING PRAIRIE MUSEUM WEBSITE The first aspect of the website is complete. The Butterflies element is in draft format and will go live in 2004. The Virtual Museum will be live in 2006.	PUBLIC WORKS	✓		✓
1.10 PUBLIC EDUCATION – NATURESCAPE MANITOBA PARTNERSHIP The Naturescape Manitoba package is nearing completion. The project is a new initiative that has not been done before in Manitoba.	PUBLIC WORKS		✓	
1.11 PUBLIC EDUCATION – CONSERVATORY This is an ongoing initiative.	COMMUNITY SERVICES	Ongoing		
1.12 PUBLIC EDUCATION – RECREATION & LEISURE PROGRAMMING This is an ongoing initiative.	COMMUNITY SERVICES	Ongoing		

More detailed description of priority initiatives . . .

- **1.1 ENVIRONMENTAL INITIATIVES MANAGEMENT STRUCTURE** An administrative structure will be put in place to integrate and coordinate environmental initiatives across the entire organization. CAO SECRETARIAT

- **1.2 PLAN WINNIPEG REVIEW** The integration of Plan Winnipeg's long-term community vision into the major decision making processes of the City at both a departmental and service level requires the ongoing evolution of inter-departmental strategies and initiatives that incorporate Plan Winnipeg policies. An important tool in this process will be the generation of a land use based, development plan that will provide a tangible set of strategies for pro-actively managing development, growth and change in the City in accordance with Plan Winnipeg's broad vision for the future.
  PLANNING, PROPERTY & DEVELOPMENT

- **1.3 ENVIRONMENTAL PLANNING & PERFORMANCE REPORTING** The City currently undertakes a series of planning and performance reporting activities through mechanisms such as business planning, corporate planning and the Plan Winnipeg review process. Over the next several years, administrative attention will focus on to performance measurement. In addition to planning and performance reporting, there are several mechanisms for communicating direction including a standard format for reports, a clear report approval process and the administrative directives system. The standard report format now includes a requirement that all administrative reports include an assessment of environmental implications. To foster an organizational culture that is attuned to issues of sustainability and to enhance accountability on this front, mechanisms for environmental planning and performance reporting will be developed and integrated with current systems.
  ENVIRONMENTAL COORDINATOR

- **1.4 NEW DEAL** On April 21, 2004, City Council adopted a New Deal proposal that is intended to provide long-term financial sustainability for the City of Winnipeg, funding that is intended to be directed toward the City's substantial infrastructure deficit. The New Deal proposal calls for changes in the funding formulas between the senior levels of government and the City of Winnipeg, a proposal that now requires significant inter-governmental negotiations. In conjunction with this initiative, the administration will continue to research the concepts of tax shifting that support environmental sustainability.
  CAO SECRETARIAT

- **1.5 ESTABLISHMENT OF THE PLANNING EXECUTIVE ADVISORY COMMITTEE (P.E.A.C.)** The PEAC is intended to provide coordinated, interdepartmental advice to the Chief Administrative Officer (CAO) with respect to long range planning policy and development issues. The committee was formed to promote leadership in planning and to focus efforts more fully on Council's priorities. The mandate of this committee, as it relates to environmental initiatives, includes: reviewing and advising on long range plans regarding land use, transportation and neighbourhood / community development; providing early assessment of the merits and risks of major development proposals while they are still at the conceptual stage
  CAO SECRETARIAT

❖ 1.6 PUBLIC EDUCATION – ASSINIBOINE FOREST

Interpretative signage, community newsletters and informational kiosks provide opportunities for informal, passive educational experiences as well as nature appreciation. Curriculum-based or customized naturalist guided hikes and tours provide formal interpretation experiences to school groups, tourists and other special interest groups. Ongoing support is also provided for school based and community level naturalization projects, including elements of fund raising, committee organization, project implementation and maintenance. PUBLIC WORKS

❖ 1.7 PUBLIC EDUCATION – LIVING PRAIRIE MUSEUM

The Living Prairie Museum provides an extensive amount of educational material for various uses including: academic research, general public, school projects, ecologists/ preservationists searching for specific information, scientific quadratic data, herbarium reference on-line, ethnobotanical database, living memories video interviews. There are 20 curriculum-based programs that Living Prairie Museum presents to school groups, seniors, daycare, pre-school and service clubs. This would include college and university lectures as well. The interpretive panels, lepidoptery display, website and PowerPoint presentation constitutes a "traveling" bilingual program that will be as far west as Alberta and will beshowcased at the International Plant Summit in the United States. This interpretive exhibit is a state-of-the-art display unit that graphically illustrates the 'plight' of the Tall Grass Prairie. It is accompanied by a video and sound tract. It is suitable and has been rented as a back drop for workshops, other interpretive centre exhibits, and has been used a backdrop for the podium in National Press Release Presentations. The museum promotes their new school programs by initiating workshops, SAG presentations, and other school in-service presentations to help teachers cover these new areas of the curriculum. These programs foster family fun and learning about the ecology of the Tall Grass Prairie and the history of the Living Prairie Museum. PUBLIC WORKS

❖ 1.8 PUBLIC EDUCATION – ZOO

The Zoo provides a number of educational opportunities on an ongoing basis. Summer interpretive talks on selected animals feature conservation messages, and of course facts concerning individual animals. Animal Encounters are special summer events where special animal exhibits are brought to the Zoo. e.g. Elephant Encounters and Bird of Prey Encounter. Which emphasize conservation messages both on a local and world-wide basis. Over the course of a year there are at least 5 separate Zoo Camps for children. The training program for Zookeepers highlights environmental issues. Conservation issues are part of the most public service announcements. The Zoo has been involved with a number of feature productions with conservation education as a key theme (e.g. Zoo Diaries, the Zoo and You, Big Breakfast, Jack Hanna). All of the interpretive signs in the zoo have a conservation message. Zookeepers often stress conservation and environmental education when talking to the public. The Zoo participated in the Canadian Assoc of Zoos and Aquariums zookeeper training initiative done in conjunction with Northern Alberta Institute of Technology. Zoo staff maintain memberships on Committees re: Canadian Nature Conservancy, Endangered Species Committee, Endangered Spaces Committee Polar Bear Standards; The Zoo is involved with many Species Survival Plans with International breeding programs as part of conservation initiatives. The Zoo staff respond regularly to questions on the environment from the general public. COMMUNITY SERVICES

❖ **1.9 PUBLIC EDUCATION – LIVING PRAIRIE MUSEUM WEBSITE** The Living Prairie Museum received external funding from a variety of external grant sources to provide an new website with expanded unique educational and interactive features. The first component is the new interactive website which replaced the Museum's existing site and included an interactive educational flash game, a shopping cart tool for purchasing the Museum's books and seed materials in the off season. It also included a searchable listing of all the educational programs and events available. This has greatly augmented the availability and services that the Living Prairie Museum staff can offer during their limited season. Response to the layout, design and content of the site has been overwhelmingly positive. And student interns and the Federal employment projects include testimony to the Web site project's success. The Intent is to provide access to the school programs, special events, information and history of the tall grass prairie to the WWW on a 24/7 basis. A second feature of the website still in production is the Butterflies of Manitoba Website. A mobile exhibit, insect costumes and live education presentation were also funded as part of the project. The funding and project was augmented by the City's translation services to include a French Version of the Website, Exhibit and PowerPoint presentation. The project was developed with the expertise of Manitoba biologists, Mb. Museum and the University of Manitoba. The program was developed and tested with the expertise of Winnipeg School Division teachers and curriculum guides and included in class workshops and butterfly garden planting workshops with two local schools. The exhibit has toured to the US, Alberta and Ontario (2005). The program has been accessed by Mb. Schools as one of the most popular Living Prairie Museum Educational Programs. The final element of online education being produced by the Living Prairie Museum is to develop a Virtual Exhibit and Website through funding from Heritage Canada. The funding is the largest of its kind for a Manitoba Museum and involves Live Web feeds of the Prairie, Video and soundscape Memory pieces and interviews, an interactive Prairie Time Line, an on-line Endangered Species Herbarium Database, a Web Forum with Moderators, scheduled to go live Jan 05-July05, and Virtual Prairie Quadrats with QTVR monitoring and hot spots for cross referencing to the rest of the Web Site. The intent is to educate on the world wide web and to provide for Heritage Canada an inventory of our "endangered herbarium samples" for use by all Canadian Heritage Members. PUBLIC WORKS

❖ **1.10 PUBLIC EDUCATION – NATURESCAPE MANITOBA PARTNERSHIP** The City has been partnering with Manitoba Conservation, Canadian Wildlife Service, Manitoba Naturalists Society, Fort Whyte Centre, Ducks Unlimited, Manitoba Habitat Heritage Corporation, Intergovernmental Affairs, and Water Stewardship (Province of Manitoba) to produce the Naturescape Manitoba education package. The package will enable private landowners to conserve and restore natural areas on their own properties. The package will be widely available and will provide specific information about the plants and animals found in and around Winnipeg. Naturescape Manitoba will also include a wide range of projects that homeowners can undertake to add some nature to their yard. PUBLIC WORKS

❖ **1.11 PUBLIC EDUCATION – CONSERVATORY**

The conservatory models environmentally friendly, least toxic horticulture in everyday practices; The major role of Conservatories is to protect plant species and communities; to educate the public about the beauty and vulnerability of the plant kingdom, and to demonstrate the essential interconnectedness of plants with all life on earth. The Conservatory endeavours to communicate this message in all of its activities. The methodology for such communications include: talking directly to the public, providing interpretive signage, media interviews, demonstrations, and presentations. Both the Conservatory and the

Friends of the Conservatory offer programming to the public. This programming has an environmental focus in keeping with the current horticultural interest, such as; composting, butterfly gardening, companion planting, least toxic pest control & native gardens. Information is also provided on specific legislation to protect endangered species. Staff frequently participate in media interviews and call-in shows to educate the public on environmentally-friendly horticultural practices. The Conservatory participates in "a partnership for plants in Canada" a CBCN program to promote greater public awareness of the importance of plants, the threats they face, and the action needed to protect them. The Conservatory provides demonstrations and presentations on many topics, including Integrated Pest Management, for outside organizations. The Conservatory demonstrates techniques of environmentally sound practices; demos and presentations of Integrated Pest Management, etc. Staff serve on education-advisory committees such as the Green Space Management Program, the Prairie Horticulture Certificate Program, etc. COMMUNITY SERVICES

❖ **1.12 PUBLIC EDUCATION – RECREATION & LEISURE PROGRAMMING**

A number of environmental education initiatives are provided through recreation programming. A summer program of Theme Weeks provide weekly special events and a variety of outdoor activities with an environmental focus, including: games; songs; and nature skills. One week Fishing Camps introduce children to fishing and the environment around them. River Interpretive Boat Tours are provided that promote awareness of the natural river environment and the integral part it plays in the City's marine ecosystem. Instructional courses are provided on composting leafs, kitchen and garden waste and Xeriscaping: an environmentally friendly approach to gardening which allows for water conservation and reduced maintenance.
COMMUNITY SERVICES

Chapter Two of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Climate Change and Air Quality.

Supportive Policy Direction can be found in the following sections of Plan Winnipeg:

- 2B-02 Commit to the Reduction of Greenhouse Gas Emissions
- 5A-05 Address Water, Air, and Noise Pollution
- 3C-01 Provide Integrated Transportation Network

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
2.1 CLIMATE CHANGE ACTION PLAN Climate Change Action Plan will be developed by the end of 2004	ENVIRONMENTAL COORDINATOR	✓		
2.2 IDLE FREE ADMINISTRATIVE DIRECTIVE An administrative directive will be implemented in 2005	ENVIRONMENTAL COORDINATOR		✓	
2.3 CLIMATE CHANGE COMMUNITY CHALLENGE (C4) The City's role will be specifically defined in 2004.	ENVIRONMENTAL COORDINATOR	✓		
2.4 ALTERNATIVE FUELS FOR CITY OF WINNIPEG TRANSIT BUSES A status report will be forthcoming in 2005	TRANSIT		✓	
2.5 NEW BUS PURCHASES / BUS ENGINE REBUILDS Replacements and rebuilds are carried out on an ongoing basis	TRANSIT	Ongoing		
2.6 BRADY ROAD LANDFILL GAS PROJECT A Request for Proposals for services related to quantification of LFG potential by field testing and determining utilization options for the gas has been issued. A consulting assignment will be made in 2004. Field testing will occur through the summer and fall months and a final report is expected early in 2005.	WATER & WASTE	✓	✓	

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
2.7 SUPPORT FOR RED RIVER VALLEY CLEAN CITIES COALITION WINNIPEG CHAPTER INC. Ongoing support is being provided for this initiative.	FLEET SERVICES SOA	Ongoing		
2.8 SMOKING REGULATION BY-LAW Council has adopted this by-law and this is now an ongoing enforcement initiative	COMMUNITY SERVICES	Ongoing		

More detailed description of priority initiatives . . .

- **2.1 CLIMATE CHANGE ACTION PLAN** Utilizing funding grants the Federation of Canadian Municipalities Green Enabling Fund and the Province of Manitoba's Sustainable Development Innovations Fund, the City of Winnipeg will establish a Climate Change Action Plan. The purpose of the plan will be to develop a Greenhouse Gas Reduction Strategy that will include a comprehensive inventory of GHG emissions in Winnipeg. The strategy will then develop specific targets for the City to reach over the next decade and identify specific initiatives the City can take to meet those targets. ENVIRONMENTAL COORDINATOR

- **2.2 IDLE FREE ADMINISTRATIVE DIRECTIVE** In March 2004, the City of Winnipeg joined Climate Change Connection's "Healthy Communities Don't Idle" campaign by posting voluntary Idle Free Zone Signs on City signposts at civic facilities – libraries, community centres, pools, and arenas - across the city. In becoming one of many partners in the program, the City of Winnipeg also committed to developing an Idle Free Administrative Directive to establish idling guidelines for the City's fleet. The Idle Free Directive will incorporate the innovative programs being developed by Transit and Fleet Management Services to create a comprehensive idle-free program to reduce GHG emissions, save energy, and promote better air quality. ENVIRONMENTAL COORDINATOR

- **2.3 CLIMATE CHANGE COMMUNITY CHALLENGE (C4)** The Province of Manitoba has invited the City of Winnipeg to participate in the Climate Change Community Challenge, a pilot program intended to assist Communities in identifying, planning and implementing energy and resource conservation initiatives that will result in reduced greenhouse gas emissions. The City of Winnipeg's role is still to be defined, but may be to work with community and neighbourhood groups selected to participate in the pilot program to develop a local action plan on climate change. Funding of $5,000 has already been allotted from the City's budget. ENVIRONMENTAL COORDINATOR

- **2.4 ALTERNATIVE FUELS FOR CITY OF WINNIPEG TRANSIT BUSES** Transit tested buses operating on 100% methanol in the mid 1990's and tested a 7.5% ethanol/diesel blend of fuel in 2001/2002 to demonstrate the viability of these fuels in urban transit service. Transit is participating in a test of a hydrogen powered hybrid bus during the winter of 2004/2005 and will be testing a hydrogen fuel cell bus in 2005. The information gathered during these tests and demonstrations has been important in furthering the use of alternative fuels in the transit industry. TRANSIT

- **2.5 NEW BUS PURCHASES / BUS ENGINE REBUILDS** Transit's fleet management plan includes provisions to replace 30 buses each year. These new buses are equipped with the latest in clean diesel engine technology that includes catalytic converters and computerized engine management systems that meet the latest emission standards. These new buses are replacing buses that are 18+ years of age that are equipped with older engines that produce more emissions. Transit has replaced 82 buses since 2002 and expects to replace a further 35 before the end of 2003. Older bus engines that must be rebuilt after over

500,000 kms of operation are equipped with the latest EPA approved rebuild parts that are designed to minimize the emissions produced by these engines. TRANSIT

- **2.6 BRADY ROAD LANDFILL GAS PROJECT** On September 1, 2003, the City of Winnipeg and Manitoba Hydro entered into an agreement to jointly carry out a study to determine the feasibility of advancing the development of a landfill gas (LFG) project at the Brady Road Landfill site in the City of Winnipeg. This agreement establishes a formal relationship between these parties under which options for landfill gas capture and utilization will be assessed and, if feasible, a business arrangement developed to take advantage of the potential at the Brady Road site. Such a project could provide an opportunity to reduce greenhouse gas (GHG) emissions, mitigate undesirable effects (e.g. odor, safety risks associated with the possibility of explosion or asphyxiation, and off-site gas migration), and provide a marketable energy product. WATER & WASTE

- **2.7 SUPPORT FOR RED RIVER VALLEY CLEAN CITIES COALITION WINNIPEG CHAPTER INC.** Fleet Management is providing ongoing support for the RRVCCC Winnipeg Chapter Inc. by way of providing office space for the organization and providing other operational resources. The group is part of a U.S. department of energy program, whose mandate is to promote cleaner burning alternative transportation fuels and other related technologies. In the U.S., the Clean Cities Program is the main mechanism through which the U.S. Department of Energy promotes the voluntary use of alternative fuels. Winnipeg is the only Canadian City involved in this program (of 80 other coalitions throughout the U.S.). Winnipeg's partnership was established in 1998 when they joined the RRVCCC, which has also has a chapter established in North Dakota. Future activities between the North Dakota Chapter and the Winnipeg Chapter will focus on initiatives along the mid-continent trade corridor. The activities conducted in the Winnipeg chapter are tailored to the Manitoba situation, and focus on raising awareness about alternative transportation fuels, facilitating the developing of funding proposals to build alternative fuel infrastructure in the region and conduct feasibility studies on cleaner burning fuels, and creating a dynamic network of partnerships between government, industry and other parties to help build the market for alternative fuels in the region. Members of the RRVCCC Winnipeg Chapter include the City of Winnipeg, Province of Manitoba, Kraus Global Inc, the Manitoba Canola Growers Association and Global Tech Canadian Hydrogen Energy Company Ltd.
  FLEET SERVICES SOA

- **2.8 SMOKING REGULATION BY-LAW** The City of Winnipeg Smoking Regulation By-law restricts smoking in all indoor public places and public motor vehicles. COMMUNITY SERVICES

Chapter Three of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Urban Energy including:

- Energy Conservation
- Sustainable Energy

Supportive Policy Direction can be found in the following sections of Plan Winnipeg:

- 5A-04 Encourage Energy Efficiency
- 2B-02 Commit to the Reduction of Greenhouse Gas Emissions
- 2B-01 Commit to Sustainability

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
3.1 HISTORICAL BUILDING GREEN STRATEGY An action plan in 2005.	PLANNING, PROPERTY & DEVELOPMENT		✓	
3.2 ENERGY SENSE PROGRAM A progress report will be provided in 2006	TRANSIT			✓
3.3 ENERGY CONSERVATION INITIATIVES This initiative is pursued on an on-going basis	TRANSIT	Ongoing		
3.4 WATER AND WASTEWATER FACILITIES Projects to be undertaken in cooperation with Manitoba Hydro will be reported on an annual basis.	WATER & WASTE	Ongoing		

More detailed description of priority initiatives . . .

❖ **3.1 HISTORICAL BUILDING GREEN STRATEGY** The City of Winnipeg's Historical Buildings Committee, an advisory committee to the Standing Policy Committee on Planning, Property and Development, on issues related to the reuse and design of heritage buildings, will undertake a review of strategies under the terms of the Historical Buildings by-law 1474/77 that can encourage environmental and economic sustainability.
PLANNING, PROPERTY & DEVELOPMENT

❖ **3.2 ENERGY SENSE PROGRAM** Winnipeg Transit's Energy Sense Program (ESP) was created to reduce fuel costs, vehicle emissions and improve productivity through energy-efficient practices. The ESP program covers aspects of fleet energy management - from vehicle maintenance to driver training. ESP promotes strategies and actions that make economic and environmental sense for Winnipeg Transit and the City of Winnipeg. Winnipeg Transit's ESP program contains 2 parts:

- Part 1 – Idle - Wise
  A comprehensive group of policies and practices aimed at reducing engine emissions and fuel consumption as a result of excessive vehicle idling. Fuel savings together with cleaner air in storage facilities as well as on street will be big motivators to the incorporation of this system.
- Part 2 - Smart Driving
  Smart Driving is a system that teaches Bus Operators driving techniques that minimize fuel consumption. By coasting around corners, reading traffic patterns and speed, vehicle idling and traffic anticipation.

The driving techniques together with an idling policy will help Winnipeg Transit to realize: a significant savings in combined fuel and maintenance costs (4 – 5 %); a reduction of Green House Gases GHG in to the atmosphere; cleaner air in Transit Storage Facilities; and, reduced noise in residential areas where buses are laying over. TRANSIT

❖ **3.3 ENERGY CONSERVATION INITIATIVES** Transit has been on the leading edge of building retrofits that are geared to reducing the consumption of energy at its major facilities. Consumption of electricity has been minimized with the replacement and de-lamping of thousands of conventional fluorescent lighting fixtures in shop and storage areas. Fluorescent lighting fixtures have been improved with mirror reflectors, electronic low consumption lighting ballasts and lower wattage fluorescent tubes. Conventional mercury vapour lighting has been replaced with high efficiency high-pressure sodium and metal halide lighting fixtures in shop areas. All parking outlets for vehicle plugs are cycled and timed to reduce electrical consumption. Natural gas consumption has been minimized with the conversion of heating systems to low intensity infrared heating units in shop and garage areas from boilers and indirect gas fired heating units. Computerized control systems have been installed in older buildings to optimize the ventilation and heating systems in all facilities. Dozens of un-insulated overhead garage doors have been replaced with insulated units that have improved weather stripping to minimize heat loss from the buildings. TRANSIT

❖ **3.4 WATER AND WASTE FACILITIES** Under the Power Smart Agreement the Water and Waste Department is working with Manitoba Hydro to identify energy efficiency savings. WATER & WASTE

Chapter Four of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Sustainable Land Use and Development including:

- Guiding Land Use Through Sustainable Urban Growth
- Parks, Open Spaces, and Natural Areas
- Developing Brownfield Sites
- Trails and Greenways
- Green Building
- Managing the Urban Forest

Supportive Policy Direction can be found in the following sections of Plan Winnipeg:

- 3A-01 Promote Orderly Development
- 3A-02 Promote Compact Urban Form
- 3A-03 Integrate Land Use, Urban Design, and Transportation Planning
- 5C-04 Protect Environmentally-Sensitive Lands
- 3B-02 Guide the Development of New and Existing Residential Areas
- 3B-05 Promote Commercial Densification
- 5E-03 Protect and Enhance Urban Forest

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
4.1 GREEN AND SUSTAINABLE BUILDINGS The city will be attempting to monitor the reduction in energy consumption attributable to this initiative on an ongoing basis.	PLANNING, PROPERTY & DEVELOPMENT	Ongoing		
4.2 FORT ROUGE YARDS RE-DEVELOPMENT PLAN A report will be forthcoming in 2004.	PLANNING, PROPERTY & DEVELOPMENT	✓		

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
4.3 ECOLOGICALLY SIGNIFICANT LANDS PLAN As it stands the recommendations for the ESNL Policy and Plan and the Plan Winnipeg amendment process are to be submitted to Council in 2004.	PLANNING, PROPERTY & DEVELOPMENT	✓		
4.4 DOWNTOWN DESIGN Urban Design principles will be brought forward for approval in 2004.	PLANNING, PROPERTY & DEVELOPMENT	✓		
4.5 PARKWAY SYSTEM PRIORITIZATION The Parkway System Prioritization Review results completed in 2004.	PLANNING, PROPERTY & DEVELOPMENT	✓		
4.6 INNER CITY INFILL HOUSING The City plans to assist with 20 infill units in Housing Improvement Zones for the 2004 fiscal period.	PLANNING, PROPERTY & DEVELOPMENT	✓		
4.7 INNER-CITY HOUSING REHABILITATION Results can be obtained on a semi-annual basis from the City's Housing Development Division.	PLANNING, PROPERTY & DEVELOPMENT	Ongoing		
4.8 GREEN ROOF STUDY The study is to be finalized and communicated in 2004.	PLANNING, PROPERTY & DEVELOPMENT	✓		
4.9 HERITAGE BUILDINGS - COMMUNITY INCENTIVES TO PROMOTE GREEN BUILDING STRATEGY Opportunities will be reviewed collaboratively by CentreVenture and city administration.	PLANNING, PROPERTY & DEVELOPMENT	Ongoing		
4.10 DEVELOPING BROWNFIELD SITE This project is in the planning and design process, and will be implemented in 2005 and 2006.	PLANNING, PROPERTY & DEVELOPMENT		✓	✓
4.11 MILLENNIUM LIBRARY Under the GMEF grant arrangement a report will be prepared at the end of the project that outlines the process that was followed during the project to determine potential energy savings. The building is to be completed in 2005.	COMMUNITY SERVICES		✓	

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
4.12 234 YOUNG STREET "GREEN INDICATOR" PROJECT The Property has been acquired and the proponent is confirming all sources of financing. This is a demonstration project to assess viability of this approach to housing rehabilitation. The project will be complete by 2005.	PLANNING, PROPERTY & DEVELOPMENT		✓	

More detailed description of priority initiatives . . .

- **4.1 GREEN AND SUSTAINABLE BUILDINGS** New building and major building retrofit projects are incorporating green building technology as part of the design process. The City of Winnipeg is actively reducing some of its more inefficient buildings that produce higher levels of green house gases. Through building consolidation projects the City is reducing the number of buildings that it occupies and is moving to new more energy efficient buildings. Also in new building projects the City is using environmentally sustainable products. Building infrastructure that is constructed, uses technical, operational, and financial analysis to determine the feasibility of using more sustainable energy sources and green building systems. Major renovations to existing buildings or newly constructed buildings are reviewed as part of the existing PowerSmart Agreement with Manitoba Hydro. PLANNING, PROPERTY & DEVELOPMENT

- **4.2 FORT ROUGE YARDS RE-DEVELOPMENT PLAN** Formulation of a plan for development of lands adjacent to the first phase of the southwest leg of the new high speed Bus Rapid Transit (BRT) System. There is an opportunity to create a high density, mixed-use residential development node linked to the downtown and the Univeristy of Manitoba by the BRT system. The concentration of a more dense population at this location with easy access to high speed transit will further the City's objective of reducing automobile dependence and increasing public transit ridership as well as encouraging compact urban development form through infilling of surplus industrial lands. The planning process has been initiated with preliminary development concepts for the lands expected by June/July, 2004. Once the preliminary concepts for the Plan Area are completed, a more formal process of generating a Secondary Plan will commence in the later part of 2004. This will provide a more specific indication of timing for the re-development plan. PLANNING, PROPERTY & DEVELOPMENT

- **4.3 ECOLOGICALLY SIGNIFICANT LANDS PLAN** The city is in the process of developing an Ecologically Significant Lands plan as part of the process to formulate a Sensitive Lands Policy Plate and Policy Statements as directed by Council for consideration as an amendment to Plan Winnipeg. To date the City Naturalist has compiled an Ecologically Significant Natural Lands (ESNL) inventory. The City has also established an ESNL Working Group comprised of the City Naturalist, representatives from Planning, Property and Development, Public Works, Manitoba Intergovernmental Affairs and Manitoba Conservation. The City plans to conduct focus groups representing various interests with a stake in the management of ESNL in the City of Winnipeg. PLANNING, PROPERTY & DEVELOPMENT

- **4.4 DOWNTOWN DESIGN** Plan Winnipeg: 2020 Vision's downtown first priority and CentrePlan identify a commitment to high standards of urban design. This commitment was confirmed in the 'Getting Down to Business' initiative—in particular a recommendation regarding preparation of urban design principles and guidelines to enhance the urban design review process mandated by the downtown zoning by-law. Key amongst the draft urban design guidelines are encouragement of adaptive reuse of buildings (including designated historical buildings) and of sustainable design (including sustainable materials, innovative energy and material conservation strategies, and minimization of environmental impacts).
  PLANNING, PROPERTY & DEVELOPMENT

- **4.5 PARKWAY SYSTEM PRIORITIZATION** Parkway System Prioritization Review – the project is a follow up review and prioritization of the Parkway System based on the initial report "Proposed Riverbank Parkway Property Acquisition" prepared in 1998. The Parkway System Prioritization Review committee has agreed to reduce the number of parkways from 16 to 6 in order to reduce the complexity of having to rate 16 different parkways. The six parkways are: North Winnipeg, Kildonan, St. Boniface/St. Vital, South Winnipeg, North Assiniboine and South Assiniboine. A set of criteria was established for rating the parkways based on six categories including linkage potential, ownership, public benefit, cost, stewardship and maintenance. Each category is rated on a scale from 1-5 with a maximum score of 30 points. The parkway with the highest score will be considered the highest priority in terms of allocation of funds for future property acquisition. Currently, two of the six parkways have been rated. The remaining four parkways should be rated by the end of 2004. It is unlikely that a re- priorization of the parkways will be required in the future. However, a periodic review may be necessary to track the completion of each parkway with respect to property acquisitions and pathway development. PLANNING, PROPERTY & DEVELOPMENT

- **4.6 INNER CITY INFILL HOUSING** Planning, Property and Development, through the Winnipeg Housing and Homeless Initiative, is assisting with development of infill housing in Winnipeg's inner city. The City is providing available lots for development to qualified non-profit housing developers and neighbourhood associations, and is providing financial assistance through the Housing Rehabilitation Investment Reserve Fund. Proponents also receive financial support from the Province of Manitoba, through the Affordable Housing Initiative. Infill housing provides affordable, energy efficient homes for low- to moderate-income families while maximizing use of land already served by all city services. The City provided land and/or funding for 46 infill homes in three Housing Improvement Zones from 2000 to 2003. Specifications for some of these houses have included R2000 insulation standard, and several have included geothermal heat pumps for temperature control. PLANNING, PROPERTY & DEVELOPMENT

- **4.7 INNER-CITY HOUSING REHABILITATION** Planning, Property and Development, through the Winnipeg Housing and Homelessness Initiative, is assisting with the rehabilitation of older dilapidated housing in Winnipeg's inner city. The City is providing funding of up to $10,000 per unit for rehabilitation of housing that is either off the market (i.e. boarded and/or vacant), or is at risk of becoming vacant due to poor physical condition. Rehabilitated housing is generally more energy efficient due to improved insulation and modern fixtures, and provides increased water usage efficiency through low-flow fixtures (i.e. toilets, shower heads and faucets). This initiative provides affordable housing opportunities for low- to moderate-income families in the city's core. It reduces waste that would be otherwise produced through demolition of these same properties. Proponents also receive financial support from the Province of Manitoba and from CMHC through the Affordable Housing Initiative.
  PLANNING, PROPERTY & DEVELOPMENT

- **4.8 GREEN ROOF STUDY** The City of Winnipeg Water and Waste Department provided information to support a Federation of Canadian Municipalities (FCM) Green Municipal Enabling Fund (GMEF) funded study to assess the potential benefits of using green roof applications in Winnipeg. The study indicates that the benefit of green roofs for storm water run-off reduction and CSO mitigation are minimal, however other benefits of providing green space in downtown areas and carbon sinks exists. The project proponent was the Centre for Indigenous Environmental Resources (CIER). The study on Green Roofs has yet to be finalized by CIER. The Department participated as a project co-sponsor and to provide specialized technical advice and input on storm water and run-off control. PLANNING, PROPERTY & DEVELOPMENT

- **4.9 HERITAGE BUILDINGS - COMMUNITY INCENTIVES TO PROMOTE GREEN BUILDING STRATEGY** The City of Winnipeg and CentreVenture Development Corporation provide grants and tax credits to rehabilitate heritage properties. The City will examine opportunities to require that a portion of the eligible costs for upgrading and repair of designated historic buildings include measures to achieve a high level of green design. PLANNING, PROPERTY & DEVELOPMENT

- **4.10 DEVELOPING BROWNFIELD SITE** The planned Public Works East Yards are to be developed on 20 to 30 acres of the City-owned Public Markets (170 acre site) Brownfield site. The administration is reviewing if some of the existing site infrastructure, such as the old surface concrete pens and underground land drainage sewers can be re-utilized in the development of the East Yards. PLANNING, PROPERTY & DEVELOPMENT

- **4.11 MILLENNIUM LIBRARY** The $19.4 million project has incorporated a number of energy efficient measures and sustainable design features in an effort to make the building more “green”. The Library Services Division has received approval for a GMEF grant from the FCM to study the impact of retrofitting an existing municipal building with a goal of trying to achieve significant energy savings on a best efforts basis within the budget of the project. The design of the building has achieved some energy savings within the budget of the project. The passive solar wall on the southeast face of the building and the overall design of the facility will achieve energy savings for the city. In addition, Manitoba Hydro is bringing additional funding to the project through the City of Winnipeg Power Smart agreement to help improve the energy efficiency of the building.
  COMMUNITY SERVICES

- **4.12 234 YOUNG STREET “GREEN INDICATOR” PROJECT** With assistance from the City’s Housing Rehabilitation Investment Reserve Fund, West Broadway Development Corporation is acquiring and rehabilitating a 1,800 square foot two-storey rooming house at 234 Young Street in the West Broadway neighbourhood for future use as a single-family residence. Building materials to be used in the project will include reclaimed materials from demolition of interior portions of the project property and from the deconstruction of another house outside of the city. The proponent will also apply techniques specific to the design needs of this building to increase its energy efficiency and improve interior air quality, so that the finished product will be affordable housing that is also environmentally friendly. PLANNING, PROPERTY & DEVELOPMENT

Chapter Five of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Sustainable Transportation, including:

- Transportation Demand Management
- Public Transportation
- Active Transportation

Supportive Policy Direction can be found in the following sections of Plan Winnipeg:

- 3C-01 Provide Integrated Transportation Network
- 3A-03 Integrate Land Use, Urban Design, and Transportation Planning
- 3A-02 Promote Compact Urban Form
- 3A-04 Protect Traffic Flows from Significant Increases
- 3B-05 Promote Commercial Densification
- 5A-04 Encourage Energy Efficiency
- 1A-06 Encourage Accessibility To and Within the Downtown

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
5.1 URBAN TRANSPORTATION SHOWCASE A report for Council will be forthcoming in 2004	ENVIRONMENTAL COORDINATOR	✓		
5.2 BUS RAPID TRANSIT Phase 1 of rapid transit is scheduled for completion by 2007.	TRANSIT	**Ongoing**		
5.3 TRANSIT PRIORITY MEASURES Transit priority measures improve the speed and reliability of transit service and have provided ongoing benefits since implementation.	TRANSIT	Ongoing		

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
5.4 PROMOTIONAL TRANSIT FARE INITIATIVES Each of these targeted initiatives has resulted in ridership increases.	TRANSIT	Ongoing		
5.5 IMPROVED ACCESS TO TRANSIT SERVICE INFORMATION These systems are very popular with transit users and intensively used. Efforts in this area are continuously evaluated for improvement opportunities.	TRANSIT	Ongoing		
5.6 PARK AND RIDE SERVICE An ongoing program that has proven popular with commuters. No further evaluation planned at this time.	TRANSIT	Ongoing		
5.7 BIKE RACKS ON BUSES Utilization is monitored each year.	TRANSIT	Ongoing		
5.8 MORE TRANSIT EXPRESS ROUTES The improvements to new express services have been well received by passengers and are well utilized.	TRANSIT	Ongoing		
5.9 DART TRANSIT SERVICE These are ongoing services that have proved popular with residents in the existing DART areas.	TRANSIT	Ongoing		
5.10 ACTIVE TRANSPORTATION – CITY OF WINNIPEG EMPLOYEES This is an on-going initiative	PLANNING, PROPERTY & DEVELOPMENT	Ongoing		

More detailed description of priority initiatives . . .

- **5.1 URBAN TRANSPORTATION SHOWCASE** In December 2003, the City of Winnipeg, in partnership with the Provincial government, was one of eight cities across Canada selected to participate in the Federal Government's Urban Transportation Showcase Program (UTSP). The purpose of UTSP was to demonstrate how innovation in public transportation related activities could reduce Greenhouse Gas emissions. The City's comprehensive proposal – Winsmart – identified a variety of innovative initiatives related to public transit, active transportation and land-use planning that would have a direct impact on reducing GHG emissions. Included in the Winsmart package was an initiative devoted to measuring GHG emissions. ENVIRONMENTAL COORDINATOR

- **5.2 BUS RAPID TRANSIT** Bus Rapid Transit (BRT) combines the attractive features of a rail system with the flexibility of a bus system to provide fast, convenient, comfortable transit service that minimizes the need to transfer. BRT features include: separate roadways called Busways -- exclusive to transit -- that permit high-speed operation (up to 80 kph); traffic signal priority for transit vehicles at intersections; fully developed Rapid Transit stations on Busways; real-time route and schedule information at stations; 'Next Stop' displays and enunciators on vehicles; modern, state-of-the art rubber-tired vehicles that provide high-level comfort and passenger amenities; and high frequency, all day service. The first priority for rapid transit in Winnipeg is the first stage of the Southwest Transit Corridor between the downtown and the University of Manitoba. This includes: upgrades to Graham Mall; diamond lanes on Main Street; a 3.4 km grade-separated busway between Queen Elizabeth Way at Stradbrook and Pembina at Jubilee; diamond lanes on Pembina Highway; and, new terminals at the University of Winnipeg and University of Manitoba. On March 19, 2004 a funding agreement was announced by the Government of Canada, Government of Manitoba and the City of Winnipeg from the Canada Strategic Infrastructure Fund for implementation of Phase 1 of Rapid Transit in Winnipeg – the Southwest Transit corridor, and the functional design of Phase 2 – the Eastern Corridor. Phase 1 includes the design and construction of all rapid transit infrastructure for the first stage of the Southwestern corridor as well as the implementation of intelligent transportation systems (ITS) to provide real time schedule information and on board "next stop" information for passengers. Completion of this phase is subject to the finalization of the funding agreement with the federal and provincial governments. TRANSIT

- **5.3 TRANSIT PRIORITY MEASURES** Traffic priority measures for Transit and cyclists include diamond lanes, transit signal priority, transit terminals at activity centres and Graham Mall. Improvements in speed and reliability make transit travel more competitive with automobile travel and attract ridership. Improvements in running times means that the same level of service can be provided at a lower cost or, alternatively, higher levels of service can be provided with the same number of buses. Transit priority measures have the greatest impact on those streets on which a large number of routes operates and are usually implemented in central business districts, shopping centres, medical centres, and universities. TRANSIT

- **5.4 PROMOTIONAL TRANSIT FARE INITIATIVES** Initiatives such as the Eco-pass, Rider Rewards and discounts for post secondary students encourage use of transit: Eco-pass provides employer sponsored discounts for transit users; Post secondary students receive significant discounts to use transit; Rider Rewards provides discount coupons for a variety of services and retail products. Each of these fare initiatives have been in place for several years. The Eco-pass and Post-Secondary pass have proven to increase ridership, while the Rider Rewards program provides an added value for frequent riders who purchase monthly passes. TRANSIT

- **5.5 IMPROVED ACCESS TO TRANSIT SERVICE INFORMATION** Navigo, Transit's on-line trip planner provides trip options for transit users in an easy to use, simple to understand format. By entering the users origin and destination, and other parameters such as walking and waiting time preferences, Navigo will provide up to 5 options for Transit users. Telebus is Winnipeg Transit's automated schedule information system and is accessed by calling 287-RIDE (7433). Every bus stop in Winnipeg has been assigned a five-digit bus stop number. This number is the way Telebus identifies each specific bus stop. The menu system asks the customer to enter that number plus the pound key # when calling for schedule information. Telebus then advises the expected arrival times of the next 2 or 3 buses for each route that operates through that stop. Transit's website provides detailed individual route maps and schedules. TRANSIT

- **5.6 PARK AND RIDE SERVICE** Nine park and ride locations operate throughout the City. Users can park their cars then use adjacent transit service to get to their destination. Some locations require a user to obtain a free permit, and at each location parking is on a first come, first serve basis. At each of these sites, an agreement has been entered into with a private sector partner. The parking lot owner makes available a number of parking spaces adjacent to an express bus stop for use by transit passengers between 6:00 am and 6:00 pm on weekdays. The private partner agrees to maintain the parking lot and to clear the lot of snow during winter. The Transit Department is responsible for upgrading the adjacent bus stop (illuminated signage, bus stop platform improvements, route and schedule information, benches, and waste receptacles) and for installing signs on the parking lot that identify the designated parking spaces. The integration of the two major urban travel modes (automobile and transit) is an effective way to increase transit ridership. Discussions are currently underway with prospective private sector partners to establish Park and Ride a lot at Henderson & Perimeter Highway (25 stalls), Club Regent (75 stalls), McPhillips Street Station (50 stalls), and Corydon & Cambridge (15 stalls). The costs for each Park and Ride lot are estimated at $15,000. TRANSIT

- **5.7 BIKE RACKS ON BUSES** A limited trial of bike racks on buses has been in place for the past five years. However, utilization of the bike racks has been quite low. On average, only 2 to 3 bikes per day are placed on the Route 60 bike racks. This is not significantly different from the experience of the initial trial. Experience to date would suggest that the Bike and Bus program appeals to a very limited customer base. In some other cities, the use of bike racks on buses is more popular. Compared to Winnipeg, however, these cities tend to be larger, have lengthier cycling seasons, have higher precipitation levels, and have a proportionately greater number of physical barriers to cycling in their transportation networks. In particular, the freeway networks common in these cities create physical obstacles that prevent cyclists from making a journey between origin and

destination completely by bike. In such situations, the opportunity to put a bike on a bus makes it possible for a cyclist to complete the other portions of the trip by bicycle. Due to the nature of the city's transportation system, however, there are few of these types of barriers in Winnipeg. Consequently, it is perhaps not surprising that the utilization of bike racks on buses has been low in Winnipeg. Based on experience to date, it is not planned to expand the program to the complete fleet at this time. The existing bike racks will continue to be used on the 60 Pembina service each year during the months May through October. The Transit Department can absorb the on-going maintenance costs of placing this limited number of bike racks on buses. TRANSIT

- **5.8 MORE TRANSIT EXPRESS ROUTES** Express services operate on a "limited stop" basis to provide faster travel times between the outer areas of the city and downtown. On the express portion of the route, each express service stops at connecting points with other routes to accommodate transferring passengers. When Council approved the Direction to the Future report in February 2000, the transit system included a network of 17 express routes that operated in the major travel corridors of the city. The report did recommend that, where feasible, additional express services be implemented. Since then, 10 new express services have been implemented and 7 existing ones have been improved. TRANSIT

- **5.9 DART TRANSIT SERVICE** Since 1996, the Transit Department has tested a new concept of service delivery in low-density areas during periods of low demand. Regular fixed route service has been replaced by a flexible dial-a-ride service (DART) that operates on demand when and where required. The major benefits to users are more direct travel, reduced walking distances, and a more secure ride. Experience to date has shown that the service works best during evenings (when most passengers are making outbound trips to their homes) and on weekends. TRANSIT

- **5.10 ACTIVE TRANSPORTATION – CITY OF WINNIPEG EMPLOYEES** Bicycle racks, lockers, and showers are available at several civic buildings. The City recently installed lockers and showers at City Hall, in part, to promote active transportation. Partnering efforts are occurring with departments on an on-going basis to promote active transportation initiatives in the workplace. PLANNING, PROPERTY & DEVELOPMENT

Chapter Six of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Solid Waste and Materials Management, including:

- Household Solid and Hazardous Waste Minimization
- Industrial, Commercial and Institutional (ICI) Waste Minimization

The following initiatives are funded and planned for implementation in 2004 to 2006:

- 5A-02 Provide Solid Waste Management
- 5A-03 Address the Danger of Hazardous Waste
- 5A-05 Address Water, Air and Noise Pollution
- 2B-04 Provide Sound Municipal Management

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
6.1 USER-PAY SOLID WASTE MANAGEMENT SYSTEM A report will be coming to Council in 2004.	WATER & WASTE	✓		
6.2 CITY OF WINNIPEG DEPARTMENTAL RECYCLING - BUILDING WASTE MINIMIZATION Recycling programs within civic buildings have been increasing over the last several years.	PLANNING, PROPERTY & DEVELOPMENT	Ongoing		

More detailed description of priority initiatives . . .

- **6.1 USER-PAY SOLID WASTE MANAGEMENT SYSTEM** In 2000 and 2001, the City of Winnipeg engaged the community in a discussion on the merits of changing the way we pay for solid waste management services and the number of diversion programs that are offered to citizens. After much debate, a compromise was reached in May of 2001. The compromise involved three main considerations: the implementation of a comprehensive recycling program at multifamily locations and public city facilities; the establishment of a recycling target of 34,000 tonnes per year; the conversion of a small commercial garbage collection services to full user-pay subscription system. In 2003, the City of Winnipeg recycled 36,223 tonnes however there is more that can be done. The size of the solid waste stream continues to grow. On March 24, 2004 the Council of the City of Winnipeg resolved that the Administration be directed to report on a full cost recovery solid waste user pay system to be considered by Council for possible future implementation on a revenue neutral basis, that is, with a corresponding reduction in property taxes. WATER & WASTE

- **6.2 CITY OF WINNIPEG DEPARTMENTAL RECYCLING - BUILDING WASTE MINIMIZATION** Most City operated office buildings have recycling programs available to them. Additionally, newly designed buildings are incorporating space for recycling services. All City demolition tenders and quotes require re-use of concrete from the building, towards a re-use crushed concrete product. The City also attempts to relocate into heritage buildings whenever financially viable.
  PLANNING, PROPERTY & DEVELOPMENT

Chapter Seven of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Sustainable Water and Wastewater Management, including:

- Water Management and Conservation
- Wastewater Management
- Waterways, Shoreline Habitat and Surface Water Runoff

Supportive Policy Direction can be found in the following sections of Plan Winnipeg:

- 3D-05 Protect and Manage Potable Water Supply and Source
- 3D-06 Provide Wastewater Management
- 5A-05 Address Water, Air, and Noise Pollution
- 5A-07 Minimize Impact of Odour from Wastewater Treatment

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
7.1 COMBINED SEWER OVERFLOW (CSO) MANAGEMENT STRATEGY STUDY The implementation plan for combined sewer overflow mitigation along with a revised water and sewer rate plan will be reported to Council in 2004.	WATER & WASTE	✓		
7.2 LEACHATE MANAGEMENT The leachate study review will be completed in 2004. The next steps will depend on the results of the study and discussions with the Province of Manitoba.	WATER & WASTE	✓		
7.3 NUTRIENT REDUCTION OF PHOSPHORUS (P) AND NITROGEN (N) IN TREATED WASTEWATER EFFLUENTS. The implementation plan for nutrient control along with a revised water and sewer rate plan will be reported to Council in 2004.	WATER & WASTE	✓		

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
7.4 WATER CONSERVATION PROGRAM The department reports to Council on this initiative as required.	WATER & WASTE	Ongoing		
7.5 WATER TREATMENT PLANT The status of the water treatment plant project will be reported to the Standing Committee on Fiscal Issues as required for the policy on reporting of capital projects in excess of $10 million.	WATER & WASTE	Ongoing		
7.6 WATER CONSERVATION – MAXIMUM PERFORMANCE TESTING OF POPULAR TOILET MODELS The completed report is available through the CWWA website.	WATER & WASTE	Completed		
7.7 EFFLUENT AMMONIA STUDIES Results of this study were reported to Council in 2002 as part of the planned wastewater treatment improvement initiatives that were to be considered by the Clean Environment Commission in 2003.	WATER & WASTE	Completed		
7.8 SEWER RENEWALS The performance of the wastewater collection system and the asset management funding requirements are report to the Standing Policy Committee on Public Works approximately every 1-1.5 years.	WATER & WASTE	Ongoing		
7.9 BIOSOLIDS MANAGEMENT PROGRAM A public consultation program is being undertaken as part of the WinGro program review. Results will be provided in 2005.	WATER & WASTE		✓	
7.10 INNOVATIVE CONSTRUCTION TECHNIQUES The performance of the wastewater collection system and the asset management funding requirements are report to the Standing Policy Committee on Public Works approximately every 1-1.5 years.	WATER & WASTE	Ongoing		
7.11 RETENTION BASINS TO IMPROVE RUN-OFF QUALITY This is an ongoing initiative	WATER & WASTE	Ongoing		

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
7.12 ULTRAVIOLET LIGHT (UV) DISINFECTION RESEARCH PARTNERSHIPS The American Water Work Association Research Foundation will be publishing a final report in 2004. Council was apprised of the results of the research in 2003.	WATER & WASTE	✓		
7.13 DISINFECTION OF TREATED WASTEWATER EFFLUENTS AT THE WASTEWATER POLLUTION CONTROL CENTRES (WPCCS) Effluent disinfection will be in operation in 2006.	WATER & WASTE			✓
7.14 WATERMAIN CATHODIC PROTECTION PROGRAM The performance of the water distribution system and the asset management funding requirements are report to the Standing Policy Committee on Public Works approximately every 1-1.5 years.	WATER & WASTE	Ongoing		
7.15 WATERMAIN CRITICALITY ASSESSMENT PROJECT Results of the study will be provided in 2006.	WATER & WASTE			✓
7.16 WATERMAIN RENEWAL PROGRAM The performance of the water distribution system and the asset management funding requirements are report to the Standing Policy Committee on Public Works approximately every 1-1.5 years.	WATER & WASTE	Ongoing		
7.17 WATER MAIN CLEANING PROGRAM The distribution system water quality will be reported after conclusion of the watermain flushing program City-wide and after commissioning of the water treatment plant.	WATER & WASTE	Ongoing		
7.18 BEST PRACTICES HANDBOOK FOR CITY'S WATERWAYS Handbook to be completed within three months of award of any contract. It is anticipated that this will occur in 2004.	PLANNING, PROPERTY & DEVELOPMENT	✓		

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
7.19 BASEMENT FLOODING RELIEF INITIATIVE – COMBINED SEWER RELIEF PROGRAM A status report on the basement flood relief program will be provided to Council in 2005..	WATER & WASTE		✓	
7.20 BASEMENT FLOODING RELIEF INITIATIVE – SUMP PITS AND PUMPS Ongoing. A status report to Council will be forthcoming in 2005.	WATER & WASTE		✓	

More detailed description of priority initiatives . . .

- **7.1 COMBINED SEWER OVERFLOW (CSO) MANAGEMENT STRATEGY STUDY** A comprehensive, multidisciplinary engineering study was initiated in 1994 to develop a strategic plan to address environmental impacts associated with CSOs in a practicable, cost-effective, and timely manner. The study was completed in 2002 and reported at the 2003 Clean Environment Commission (CEC) hearings. The study confirmed that reduction or elimination of CSOs would have limited environmental and health risk benefits, and is primarily a policy issue. Consistent with CSO control practices elsewhere it was determined that the cost to reduce the current city-wide average of 18 overflows to 4 overflows during the recreation season (May 1 to Sept 30, inclusive) would be approximately $297 Million (2004$) while complete separation of the sewer system was estimated at $1.5 billion. It is anticipated that the CSO control program will be implemented in four stages. Stage 1 will involve raising weirs, Supervisory Control and Data Acquisition (SCADA) and pilot testing. Stage 2 will involve integration with basement flood relief programs. Stage 3 will involve accessing available system storage to capture and contain overflows. Stage 4 will involve developing additional storage to achieve 4 overflows. The Clean Environment Commission concurred with a long-range target of 4 overflows per year and recommended that the City achieve this target in 20-25 years. The Water and Waste Department is in discussion with Manitoba Conservation through the licensing process on the required implementation timeframe. This major project is only partially funded by the existing infrastructure renewal program and therefore additional resources will be required over the longer-term. WATER & WASTE

- **7.2 LEACHATE MANAGEMENT** The Clean Environment Commission (CEC) concluded hearings regarding the North End Water Pollution Control Centre in 2003 and recommended that disposal of leachate at the City's water pollution control centers be terminated. Manitoba Conservation's plan for implementation of this recommendation includes the City participating in a systematic province-wide approach to achieve the goal of eliminating disposal of leachate at the City's water pollution control centers. The City has initiated a review of leachate management alternatives through an engineering consultant, Dillon Consulting Ltd., to prepare for participation in the province-wide approach to dealing with leachate. The review will include reviewing data, regulations, state-of-the-art practices and technologies, and will define the Best-Fit Process/Systems for leachate management and associated capital and operating costs. WATER & WASTE

- **7.3 NUTRIENT REDUCTION OF PHOSPHORUS (P) AND NITROGEN (N) IN TREATED WASTEWATER EFFLUENTS.** The City of Winnipeg was mandated by the Province of Manitoba in response to 2003 Clean Environment Commission hearings to reduce the concentrations of nutrients (N and P) in their treated effluent discharge. The Water and Waste Department is actively working with Manitoba Conservation to implement biological nutrient removal (BNR) at all three wastewater treatment plants within a reasonable timeframe. The Province of Manitoba in response to Clean Environment Commission recommendations established compliance limits of 10 mg/L for total nitrogen (TN) and 1 mg/L for total phosphorus (TP) for treated effluent. The province's interim targets are to reduce the nitrogen and phosphorous loads to Lake Winnipeg by 13% and 10% respectively by the end of 2006. The estimated cost to implement full BNR to achieve these compliance limits is approximately $270 million (2004$). The

schedule for implementation of nutrient control is currently being discussed with Manitoba Conservation through the licensing process for all three wastewater pollution control centers (WPCC). WATER & WASTE

- **7.4 WATER CONSERVATION PROGRAM** The water conservation program objectives are to ensure that current and future water demands remain within the capacity of the aqueduct. Council approved the water conservation program in 1993 when faced with the possibility of having to secure an additional water supply to supplement the existing Shoal Lake aqueduct capacity. This ongoing program is focused on reducing water consumption for the long-term. Measurable water consumption reductions have been observed in industrial, commercial and residential demands. The Department partners annually with the Fort Whyte Centre to deliver water efficiency youth education at a cost of $35,000.00/yr. WATER & WASTE

- **7.5 WATER TREATMENT PLANT** Council adopted the recommendation that the City construct a water treatment plant to enhance public health protection against pathogens, reduce chlorine disinfection by-products and to meet more stringent water quality guidelines. The Water Treatment Plant (WTP) conceptual design was completed in 2003. The estimated project cost is $214 million. Construction is to start in 2004 with a proposed completion date of late 2007. A financial plan was approved by Council in 1993 to finance 50% of the cost through contributions made to the WTP reserve and the balance through debt. The ultraviolet light disinfection facility will be the first stage of the water treatment project. WATER & WASTE

- **7.6 WATER CONSERVATION – MAXIMUM PERFORMANCE TESTING OF POPULAR TOILET MODELS** The Canadian Water and Wastewater Association (CWWA) conducted this study to identify how well popular 6 litre toilets performed using a realistic test method to grade each toilet model based on performance. The Maximum Performance Testing of Popular Toilet Models was completed in December 2003. CWWA identified a need for a 6 litre maximum flush performance test due to reports of poor toilet performance and/or water flush volumes well in excess of the stated 6 litres. The Water and Waste Department contributed $5,350.00 towards this study. This information is of value to customers seeking uniform, third party performance testing of popular 6 L toilets. WATER & WASTE

- **7.7 EFFLUENT AMMONIA STUDIES** A comprehensive environmental study was initiated in 1997 and completed in 2002 to determine appropriate protective criteria and associated engineering works related to wastewater treatment to protect aquatic life in the local rivers. The studies were undertaken in direct response to 1992 Clean Environment Commission recommendations. Results and recommendations of the studies were reported at the 2003 Clean Environment Commission (CEC) public hearings. The current CEC recommendations for the City of Winnipeg to employ full nutrient control for both Phosphorus (P) and Nitrogen (N) at all three wastewater pollution control centers will provide a much higher level of protection with respect to ammonia toxicity than needed to protect aquatic life. WATER & WASTE

- **7.8 SEWER RENEWALS** The Water and Waste Department has an ongoing program to identify sewers that are judged to be in serious distress or have deteriorated to a state of impending failure that require some form of rehabilitation or complete renewal. The sewer renewal program is an ongoing activity that is currently funded from Sewer Renewal Reserve that is supported by the Sewer Maintenance frontage levy at an annual rate of $11.5 Million. A sewer-cleaning program is also

conducted annually and is used to remove debris that has settled on the bottom of the sewer and greatly diminished the hydraulic capacity of the sewer. Sewer televising is done immediately after cleaning and used to identify any structural defects. The televising information is used to rate the sewer's condition and prioritize remedial actions for rehabilitation.
WATER & WASTE

❖ **7.9 BIOSOLIDS MANAGEMENT PROGRAM** The Water and Waste Department has an environmental licensed program called WinGro to land apply biosolids on farmlands on a year-round basis. Manitoba Conservation issued the Environment Licence in 1989. The WinGro program has met all the conditions of the Environmental Licence since its inception and has continuously improved to be more efficient and cost-effective. Over 15 years of research has been conducted in partnership with the University of Manitoba Soil Science department to ensure the safety and benefit of land applying biosolids. The current WinGro program application is safe and provides for at least 10 years of benefit to the farmer to grow crops at its current rate of application. A condition of the Environmental Licence is to perform a review of the program to ensure that it is keeping pace with evolving regulatory requirements. As such the current biosolids management program is under review to determine if any changes or modifications are required to comply with current and emerging regulatory requirements.
WATER & WASTE

❖ **7.10 INNOVATIVE CONSTRUCTION TECHNIQUES** Traditional open cut methods to install or repair sewers are now being replaced in certain circumstances by no dig 'trenchless' technologies. No dig technologies have advanced to the point of being more cost effective than open cut methods because they are less disruptive to established neighborhoods, can work in environments or conditions not possible by open cut methods, and greatly minimize the cost of surface repairs and restoration.
WATER & WASTE

❖ **7.11 RETENTION BASINS TO IMPROVE RUN-OFF QUALITY** Developments further from natural drainage courses often require the use of storm retention basins to cost-effectively drain developed lands and convey the collected flows to the local rivers. A secondary benefit of storm retention basins is improvement of water quality through settling, natural sunlight disinfection, and the uptake of nutrients by aquatic weed, algae and shoreline plants. WATER & WASTE

❖ **7.12 ULTRAVIOLET LIGHT (UV) DISINFECTION RESEARCH PARTNERSHIPS** The Water and Waste Department was successful in being awarded funding from the American Water Works Research Foundation (AWWARF) and the Federation of Canadian Municipalities' Green Municipal Enabling Fund to investigate industry-leading research in the application of UV disinfection for unfiltered waters. The UV disinfection pilot works proved successful. The planned water treatment plant process and implementation program were impacted in a positive manner. Council approved the implementation of the UV disinfection facility prior to the full water treatment plant construction to enhance public health protection against pathogens. AWWARF provided funds of $125,965 US and the FCM approved funding in the amount of $90,000 Cdn. WATER & WASTE

- **7.13 DISINFECTION OF TREATED WASTEWATER EFFLUENTS AT THE WASTEWATER POLLUTION CONTROL CENTRES (WPCCS)** Effluent disinfection is required under Provincial environmental regulations to comply with microbiological limits set for surface waters receiving discharges from wastewater treatment systems. Currently, treated effluent from the South End WPCC is disinfected through the use of Ultraviolet (UV) technology, and at the West End WPCC through existing polishing ponds via natural sunlight on a seasonal basis. Effluent from the North End WPCC is not disinfected at this time but engineering services were commissioned in early 2003 to implement UV disinfection technology at the NEWPCC based on experience from the SEWPCC UV system performance and operation. WATER & WASTE

- **7.14 WATERMAIN CATHODIC PROTECTION PROGRAM** The watermain cathodic protection program is a method to reduce the rate of corrosion naturally occurring on the existing cast iron watermains in the water distribution system. The area wide application of the watermain cathodic protection program commenced in 1999. The benefits of the program are: extended service life of cast iron watermains, reduced rates of cast iron watermain leaks and repairs, and reduced surface restoration. The program is funded from the watermain renewal reserve account that is supported by the frontage levy. The construction technique for installing watermain anodes has advanced to the point where surface disruptions are almost non detectable.
  WATER & WASTE

- **7.15 WATERMAIN CRITICALITY ASSESSMENT PROJECT** The Water and Waste Department is undertaking a study to develop a methodology to prioritize and allocate funding for watermain renewal and/or rehabilitation taking into account such variables as customer impact, transportation impact, pipe material and age, environmental risks and cost. This study will investigate advanced integration of such tools as GIS mapping, existing material and repair data and predictive failure modelling techniques with the goal to minimize customer impacts, minimize environmental risks and maximize strategic investment of watermain renewal funds. The report will recommend a system and/or application to be constructed under a future contract.
  WATER & WASTE

- **7.16 WATERMAIN RENEWAL PROGRAM** The program is focused on the replacement and rehabilitation of deteriorating watermain infrastructure. This program has been in place for a number of years. The benefits of the program are: replacement of cast iron watermains in a timely manner, reduced unaccounted-for water, reduced number of watermain breaks and investigation of rehabilitation technology to extend the service life of the mains. WATER & WASTE

- **7.17 WATER MAIN CLEANING PROGRAM** The Water and Waste Department is undertaking a program to clean the watermains in the City's water distribution system in preparation for the new water treatment plant commissioning in late 2007. The watermain cleaning program commenced in 2003 and will be an ongoing program. Organic materials naturally present in the City's source water precipitate out of the water and accumulate in the watermains. The water produced from the new water treatment plant will be of higher quality thus the need to clean the distribution system to maintain quality water delivered to the customer. WATER & WASTE

❖ **7.18 BEST PRACTICES HANDBOOK FOR CITY'S WATERWAYS** Best Practices Handbook will be developed to ensure that the City is conducting its planning, construction, operation and maintenance activities along its waterways in a manner that eliminates, or where unavoidable, minimizes impact on habitat. The initiative came as a result of the Federal Government and, in particular, its Department of Fisheries and Oceans enhancing its presence in Manitoba in 2000 for purposes of enforcement of the Fisheries Act. This initiative has the support of the City's Riverbank Management Committee.
PLANNING, PROPERTY & DEVELOPMENT

❖ **7.19 BASEMENT FLOODING RELIEF INITIATIVE – COMBINED SEWER RELIEF PROGRAM** In 1977, the City initiated the Combined Sewer Flood Relief Program. The Program's goal is to reduce the risk of sewer backup into basements due to an overloaded wastewater collection system that can occur during heavy rainfall events. Combined sewer districts are studied and optimized capital improvements to the systems are implemented to meet current standards of basement flood protection. Since the mid – 70s, over $250 million (2004 Dollars) has been spent on this program. It's estimated that an additional $110 million will be required to complete all remaining combined sewer districts. The program also includes a public information campaign aimed at encouraging property owners to take protective measures on their own property. Separate sewer districts will be studied in the future to define relief requirements and costs. WATER & WASTE

❖ **7.20 BASEMENT FLOODING RELIEF INITIATIVE – SUMP PITS AND PUMPS** In late 1990, the Winnipeg Building By-Law was amended to require that all new buildings with basement subsurface drainage (weeping tiles) have sump pits and pumps and discharge weeping tile water flows to the outside of the building. In addition, the City, since the 70s, has conducted a public information campaign to encourage all building owners to install sump pits and pumps. All new construction since late 1990 has conformed to the by-law. Also, many owners of homes built prior to the by-law have installed sump pumps and pits to enhance flood protection on their property. The public information campaign is ongoing and includes other information such as backwater valve installation, improved lot grading, disconnection and extension of downspouts and sump pump maintenance guidelines. City-wide mailings of informational brochures are sent out annually. WATER & WASTE

Chapter Eight of *Sustainable Winnipeg: A Comprehensive Environmental Strategy* refers to Pesticides in the Urban Environment, including:

- Insecticides and Larvicides
- Herbicides and Fungicides

Supportive Policy Direction can be found in the following sections of Plan Winnipeg:

- 5A-06 Provide Safe and Effective Pest and Weed Control

The following initiatives are funded and planned for implementation in 2004 to 2006:

IMPLEMENTATION TIMELINE AND COMMITMENT	LEAD RESPONSIBILITY	2004	2005	2006
8.1 PUBLIC EDUCATION – INSECT CONTROL This is an ongoing initiative	COMMUNITY SERVICES	Ongoing		
8.2 PARTNERSHIPS – INSECT CONTROL The Insect Control Branch maintains regular contact with other mosquito control agencies across North America	COMMUNITY SERVICES	Ongoing		
8.3 INSECT CONTROL: ENVIRONMENTALLY FRIENDLY PRACTICES & APPROACHES A new insect control strategy will be developed for the upcoming season based on the outcomes of the 2004 insect control season.	COMMUNITY SERVICES		✓	
8.4 PUBLIC EDUCATION – REDUCE PESTICIDE USE ON PRIVATE PROPERTY This is an ongoing initiative.	PUBLIC WORKS	Ongoing		
8.5 WEED CONTROL RESEARCH AND EXPERIMENTATION This is an ongoing initiative.	PUBLIC WORKS	Ongoing		

More detailed description of priority initiatives . . .

- **8.1 PUBLIC EDUCATION – INSECT CONTROL** TEAAM (Targeted Environmental Action Against Mosquitoes), a cost shared initiative between the City of Winnipeg and the Province of Manitoba was adopted in 2003 under the "Mosquito Control Strategy - Blueprint for Action" to increase public education about reducing mosquito breeding sources in homeowners' yards and to increase information on personal protection measures that homeowners could take during the mosquito season. Staff conducted yard inspections with the consent of the homeowner in the Wolseley and Garden City neighbourhoods during the summer of 2003; Information on a variety of insect pests is provided on the City of Winnipeg's website. Brochures are also available at all City libraries. The information emphasizes culturally based approaches to pest management; Insect Control staff inspect industrial properties, tire depots, cemeteries, golf courses, public work yards, etc., to educate staff on the premises on source reduction as part of a integrated pest management strategy to reduce mosquitoes; Information to homeowners on non-chemical alternatives to pest control is emphasized, e.g.. reducing standing water, filling in low lying areas, personal protection, etc.; The Insect Control Branch responds regularly to questions on the Bugline from the public on environmentally-friendly approaches to pest management; The interpretive panels and display educate citizens the role they can play in helping to control mosquito breeding in their own yard. The display has been used at various venues including the Manitoba Home & Garden Show, Oak Hammock Marsh, Public Works Expo Day and shopping malls. COMMUNITY SERVICES

- **8.2 PARTNERSHIPS – INSECT CONTROL** Collaborate with other mosquito abatement agencies to improve technology and investigate new products that are more environmentally-friendly. COMMUNITY SERVICES

- **8.3 INSECT CONTROL - ENVIRONMENTALLY FRIENDLY PRODUCTS AND APPROACHES** The City of Winnipeg's Insect Control Branch utilizes an integrated approach to pest management, utilizing environmentally sensitive approaches as much as possible. This includes a range of activities such as the use of chemical and biological controls; increased use of larviciding in order to reduce the need for adult mosquito control; reduction of standing water sites which breed mosquitoes; public education related to reducing mosquito breeding sites on private property and the promotion of personal protection; and participation in research activities regarding best-practices for environmentally sensitive approaches to insect control. COMMUNITY SERVICES

- **8.4 PUBLIC EDUCATION – REDUCE PESTICIDE USE ON PRIVATE PROPERTY** Since the vast majority of herbicides are used by private individuals, the Parks and Open Space Division provides yearly financial support for a series on organic pest control workshops through the Manitoba Eco-Network to reduce the herbicide use on private properties. PUBLIC WORKS

- **8.5 WEED CONTROL RESEARCH AND EXPERIMENTATION** The Parks and Open Space Division has participated in research activities regarding best-practices for environmentally sensitive approaches to weed control. Over the last 16 years the Department has reduced herbicide use by 54% to the point where parks and boulevards receive an application only once a significant weed threshold level is reached. This has resulted in the average park or boulevard receiving treatment only once every 5 years. Herbicides continue to be used as a last resort only. The Department will continue to experiment with alternative methods of weed control as research identifies more efficient and effective alternatives. PUBLIC WORKS