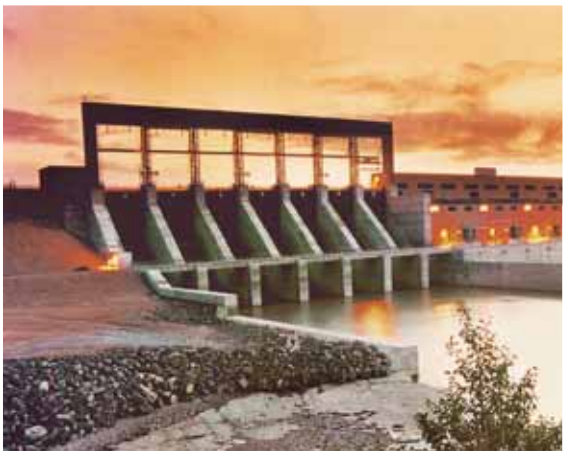
Green and Growing

BUILDING A GREEN AND PROSPEROUS FUTURE FOR MANITOBA FAMILIES



Manitoba

Building for the Future

Message from the Minister

Since 1999, the Manitoba government has been working hard – in concert with many Manitoba organizations, businesses and individuals – to address the environmental challenges that confront us and seize upon many of our province's unique environmental advantages. We want to ensure a sustainable environment and prosperous economic future for our children and grandchildren.

On behalf of the Manitoba government and the people of our province, I am happy to present *Green and Growing* – our government's green strategic framework. It contains many examples of our collective accomplishments and provides future direction for continuing to build a green and prosperous future for Manitoba families.

Our hard work has been recognized by several independent bodies like the David Suzuki Foundation, the Canadian Energy Alliance and by the influential *Business Week* magazine that placed Premier Gary Doer in the list of the top 20 international leaders who are combating climate change. Premier Doer is the only Canadian leader on this list. The magazine also ranked Manitoba as the number one regional government in the world for battling climate change.

Indeed, much has been accomplished in a few short years. However, there is much more to do. Throughout *Green and Growing* you will see how we are developing the seven strategic priorities we have been focusing on to achieve sustainability across our province. This is a goal that cannot be reached by government alone – we must all work together in order to achieve success.

I invite you to read this document and join us in preserving and protecting our environment, promoting the health and well-being of Manitoba families and stimulating and managing sustainable economic growth today and for generations to come.

Dave Chomiak
Minister, Manitoba Energy, Science and Technology

P.S. Please also visit us on the web at **www.manitoba.ca** for more information.

"UNDER (PREMIER GARY) DOER, SUSTAINABLE DEVELOPMENT HAS BECOME AN ECONOMIC LINCHPIN IN THE CANADIAN PROVINCE OF MANITOBA."

— ***BUSINESS WEEK***, DECEMBER 2005

Table of Contents

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Ce document est également offert en français.

Green and Growing

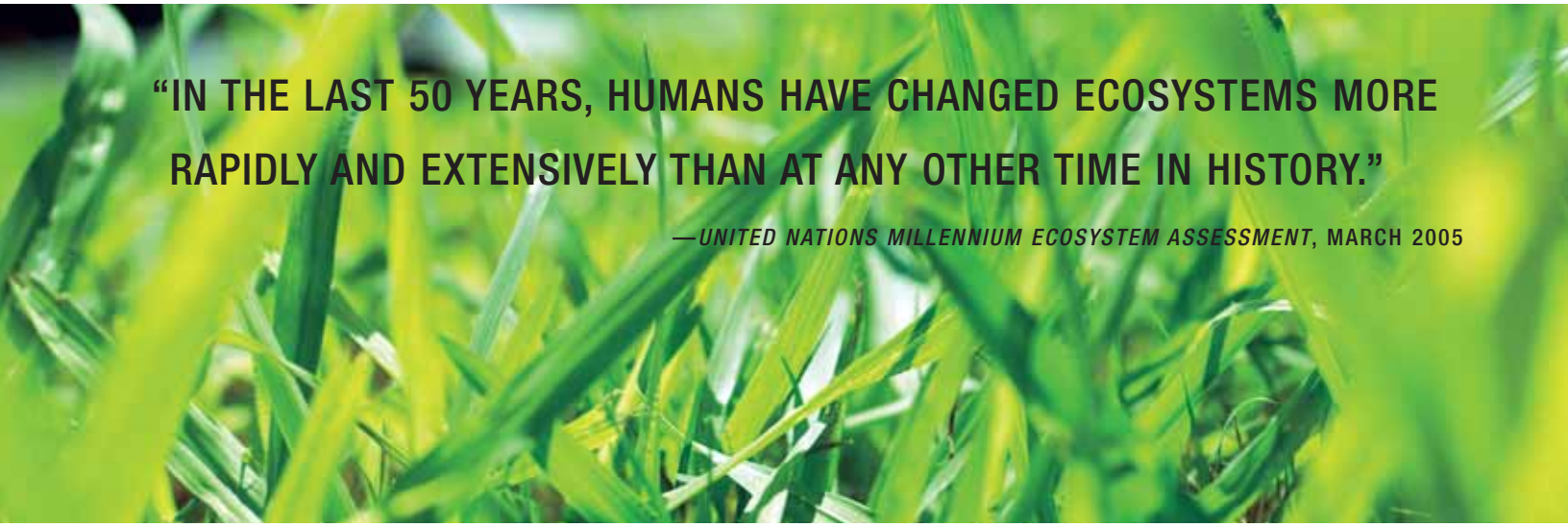
BUILDING A GREEN AND PROSPEROUS FUTURE FOR MANITOBA FAMILIES

Manitobans are lucky. We are blessed with a clean, natural environment and vast water resources that are the envy of the world. But it might not always be that way. Our environment is under threat from a number of pressures. We must take action today to address these pressures and ensure a sustainable future for our children and grandchildren.

Creating a green economic and social future for Manitoba families is a key part of the Manitoba government's vision and a major driving force behind its activities.

Since 1999, the Manitoba government has implemented dozens of initiatives, laws and programs aimed at protecting and improving the province's environment. Collectively, these actions form a green strategic framework that has been created by government but is supported by businesses and communities throughout Manitoba. This framework focuses on preserving and protecting our environment as well as growing the Manitoba economy.

In Manitoba, we know the goals of protecting the environment and growing the economy can be achieved simultaneously. In fact, Manitoba is well placed to accommodate these two goals. We plan to take advantage of this situation by building a dynamic green economy that sustains our natural assets, promotes a healthy, vibrant society and ensures a prosperous future.



We Must Take Action Now

While our society is generally more affluent, more educated and enjoys more social benefits than ever before, our success has had a negative effect on our environment. The past half-century has seen ecosystems altered more radically and deeply than ever before. Changes to our climate, declines in water quality and loss of forested land are having both environmental and economic impacts. For example, increased water pollution is escalating the cost of water treatment worldwide.

Unpredictable weather events associated with climate change are raising global insurance costs by billions of dollars each year. Loss of forested land is increasing drought and reducing food production in many parts of the world. Declining supplies of oil and gas will continue to drive energy prices up. According to the *United Nations Millennium Ecosystem Assessment* of March 2005, if these trends continue, by 2050 we will not be able to sustain either our global environment or our global economy.

While this outlook seems dire, we can reverse this trend by taking action today. The UN's report – authored by 1,300 of the world's top experts on the environment and economics – is perhaps the most definitive statement that we cannot ignore the link between environmental sustainability and economic prosperity.

Manitoba – A World Leader in Building a Prosperous and Green Future

The good news is Manitobans are already taking action. Since 1999, the province has been recognized as a world leader in planning and preparing for a greener future.

The construction of wind farms and expansion of ethanol and biodiesel production in rural Manitoba are adding new sources of clean energy and providing new sources of income for the rural economy.

Award-winning green buildings like Red River College's downtown campus, Mountain Equipment Co-op and the new Manitoba Hydro headquarters are saving energy and bringing renewed economic activity and vitality to downtown Winnipeg. In Manitoba's North, green energy initiatives will reduce emissions from fossil fuels, provide more affordable and efficient housing and create new jobs and training opportunities.

As we work to protect Lake Winnipeg and the boreal forest on the east side of the lake, we are also protecting traditional livelihoods such as fishing and trapping, as well as creating new sustainable economic opportunities for First Nations communities.

Manitoba is also home to a growing environmental industrial sector that currently generates close to 5,400 full-time jobs and $350 million in earnings annually. From New Flyer's hybrid buses to our high-efficiency window manufacturers, from biomaterials and biofuels to natural gas refueling and hydrogen-handling expertise, our province has a fast growing innovation and technology sector. For example, new solutions to ecological problems are being developed in Manitoba and will provide new, highly-skilled, well-paid jobs. Worldwide, the environmental technology sector is estimated between $250 billion and $400 billion (US) and this is rising by 5% per year.

Manitoba's hydropower is our most obvious advantage. Manitobans enjoy the lowest electricity rates in North America. In addition, our electricity is generated by clean hydro that provides significant exports to the United States and helps make our province one of the most affordable places to live in Canada.

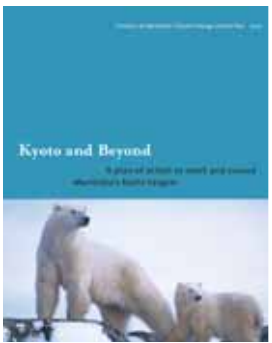
Manitoba Hydro, our provincially-owned power utility, has a bright, dynamic future with new power generation projects like Wuskwatim and full partnerships with First Nations communities. The Province of Ontario is partnering with Manitoba to double our east-west transmission capacity, helping move toward a national energy grid and helping ensure Canada's energy security, while removing tens of millions of tonnes of greenhouse gas emissions through the replacement of Ontario's coal powered plants.

Manitoba Hydro, the provincial government and the private sector are currently working on numerous other alternative clean power projects that will create jobs and economic growth in Manitoba while also protecting and preserving our planet. For example, the town of St-Léon is at the centre of a major construction project to create one of the largest wind energy farms in Canada. This $210 million project will have a significant economic impact in the region, including generating 300 direct and indirect jobs. It will also help move Manitoba towards an even cleaner energy future through a strong partnership between the community and the private and public sectors.

These initiatives, and many more, are moving forward as a result of hard work by Manitoba citizens, communities and businesses as well as the provincial government.

"MANITOBA, WHICH RANKED FIRST WITH AN A, IS SETTING THE GOLD STANDARD FOR THE REST OF THE COUNTRY."

— CANADIAN ENERGY EFFICIENCY ALLIANCE, DECEMBER 2004



"MANITOBA'S CLIMATE CHANGE PLAN IS THE BEST OF ALL THE PROVINCIAL AND TERRITORIAL PLANS."

— DAVID SUZUKI FOUNDATION, OCTOBER 2005

While all this is positive news, we know we have much more to do. In July 2005, the Manitoba government issued its first ever *Sustainability Report* that measured the province's overall well-being in terms of environment, economy, health and social development. The report generally concluded that good progress is being made on virtually all fronts. However, Manitobans, as a whole, need to accelerate work in areas like water consumption and waste reduction.

Green and Growing is a strategic framework that will continue to be developed and expanded as we go forward. Through this strategic framework, we hope to provide Manitobans, and the world, with a better understanding of the Manitoba government's overall approach to the environment as well as the health and well-being of our province and its families. Our goal is to build a future that promises to be both green and growing for the benefit of all Manitobans.

Overview

Manitoba's Green Strategic Framework

The vision: a greener and more prosperous Manitoba

The Manitoba government's strategic framework for a green, prosperous, growing province is a guide to how we will continue to approach preserving and protecting our environment, promoting the health and well-being of Manitoba families and stimulating and managing sustainable economic growth.

Seven priorities for a greener future

Since 1999, the Manitoba government's strategy has been to focus on the following seven priorities to promote a healthy environment and a sustainable, growing economy:

1. **Acting on energy and climate change**

   We're addressing the most serious threat to our planet's future and taking advantage of Manitoba's unique energy situation for the benefit of all.

2. **Protecting our water**

   We're taking significant steps to ensure safe drinking water and preserve and enhance Manitoba's system of lakes and rivers.

3. **Protecting our natural areas**

   We're working hard to add to the greatly increased protection we have already introduced for our parks, protected areas and other important habitats.

4. **Reducing waste and preventing pollution**

   We're making progress on recycling and reducing waste in communities across Manitoba.

5. **Growing a sustainable, prosperous economy**

   We're working with the private sector to grow the economy in sustainable ways – through innovation and adaptation.

6. **Fostering a green and healthy society**

   We're promoting greater awareness about everyone's responsibility to preserve and protect the environment and how it's tied to the health and well-being of Manitoba families.

7. **Greening the provincial government**

   We're leading by example by ensuring the government runs its internal operations in a green, sustainable, innovative way.

1. Acting on energy and climate change

Climate change caused by greenhouse gas emissions is predicted to raise temperatures in Manitoba four to six degrees Celsius within the next 50 to 100 years. While that might seem appealing during a mid-winter cold snap, these changes in temperature can have serious negative consequences that could forever alter the ecological balance of our province.

Rising global temperatures are predicted to affect Manitoba in several ways – more frequent droughts, more intense rainstorms that could cause problems in agricultural areas, unpredictable water levels in our rivers and lakes, dramatic reductions of our boreal forest and melting permafrost in our tundra region. Milder temperatures are already affecting the North in disturbing ways. Ice roads that many remote communities depend on are melting earlier and our famous polar bear population is declining as a direct result of climate change.

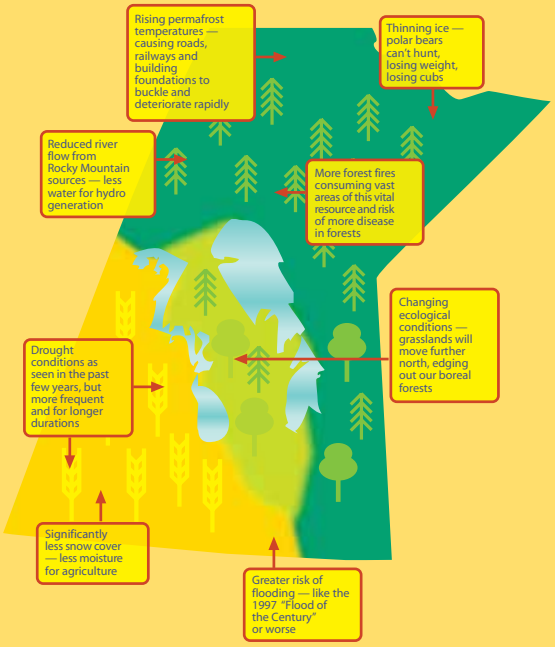
Across our province, however, the negative consequences of climate change include increased uncertainty for farmers, forest industries, recreation and tourism. Recent years have seen historic floods, seasons of extreme precipitation and, paradoxically, severe droughts. These major weather fluctuations make planning decisions for business, farmers and local governments more difficult and riskier in terms of investments.

Manitoba and the Kyoto Protocol

In 2002, Manitoba took a leadership role in calling on the federal government to ratify the Kyoto Protocol – the only international agreement that provides a clear path to reducing greenhouse gas emissions. The federal government signed the agreement and it has officially been in force since February 2005. In Manitoba, work is already underway to meet and exceed Kyoto targets.

Our first green priority is to meet and exceed climate change targets, as established in the* Kyoto Accord*, and create sustainable business practices and opportunities in the process. Many actions are being taken to meet this priority.

What Climate Change Means to Manitoba



Wind Energy

One of the single largest wind farms in Canada is being built in southwest Manitoba at St-Léon. When complete, it will supply 99 megawatts of electricity into the provincial grid – enough to power all the households in Portage la Prairie and Morden combined.

WE WILL BUILD ON THIS BY: committing to a very aggressive goal of developing 1,000 megawatts of wind power in Manitoba over the next decade. This will generate significant levels of clean, renewable electricity and enable greenhouse gas reductions of more than 3.5 million tonnes annually and stimulate $2 billion in new investments – plus ongoing, sustainable jobs and incomes to help rural communities grow and prosper.

Earth Energy

Manitoba has become a leader in earth energy systems also known as geothermal or ground source heat pumps. These systems provide the lowest cost heating and cooling in the world. Instead of burning fossil fuels or powering an electric element, a pump moves heat into or out of the ground. The only ongoing cost is electricity to run the pump and circulate the hot or cool air. By installing a geothermal system, an average home could reduce greenhouse gas emissions by five tonnes each year.

Manitoba now has between 25% and 30% of all geothermal system installations in the country and 56% of Canada's geothermal installers are trained in Manitoba. Manitoba Hydro's Earth Power Loan Program has helped make this renewable energy technology more accessible to Manitoba homeowners, with installations tripling in the past four years and predicted to double again in the next two years.

WE WILL BUILD ON THIS BY: merging Winnipeg's need for new housing lot development within city boundaries with the development of geothermal power. For example, by the fall of 2006, Waverley West in Winnipeg's southwest quadrant will begin development and its houses will benefit from the availability of built-in geothermal systems. These systems eliminate natural gas bills, reduce greenhouse gas emissions and foster a growing industry in our province.

Saving Energy – Demand Side Management (DSM)

With rising heating fuel costs, Manitobans are increasingly aware of the need to reduce our energy consumption. Reducing our demand on electric heat has the added benefit of freeing up hydropower for exports and creating new business opportunities for Manitoba Hydro. Through Manitoba Hydro's Power Smart program, Manitoba has been more aggressive than ever in pursuing energy efficiency by offering home energy audits, home retrofit loan programs and promoting energy-efficient appliances in our homes and businesses.

By 2002, all Manitoba government buildings met and exceeded Kyoto emissions targets. In 2004, Manitoba Hydro and the Manitoba government were awarded the Canadian Energy Efficiency Association's top grade.

In bestowing the award, the association stated that **Manitoba is "setting the gold standard for the rest of the country."**

Recent progress includes the launch of a new $16 million Home Insulation Program, where homeowners who heat with natural gas can receive a rebate of up to 100% on insulating materials for their home – expected to average over $500 per project.

WE WILL BUILD ON THIS BY:

- establishing a new provincial energy saving target of 842 megawatts of electricity by 2017 (up from 241 megawatts), representing the energy equivalent of a hydro dam greater in size than the proposed Gull (Keeyask) project and reducing greenhouse gas emissions by more than 800,000 tonnes each year
- introducing new efficiency incentives for insulation and installing high-efficiency natural gas furnaces, as well as targets for efficiency in natural gas use
- introducing the first-ever energy efficiency project aimed at Winnipeg's inner city
- expanding green energy opportunities for Aboriginal communities, including home energy retrofits, wind power testing and development and an extensive multi-year energy efficiency program in Island Lake
- doubling the number of Climate Change Community Challenge programs
- consulting with the business community to bring in new commercial building codes that will further promote green building development
- encouraging greater use of transit systems and bicycle paths to reduce greenhouse gas emissions
- establish a stabilization and affordable energy fund with hydro export revenues, through *The Winter Heating Cost Control Act*, that will help natural gas consumers deal with rate shock in the short term, but also significantly expand Power Smart energy-efficiency programs and promote geothermal heat pump installations to reduce Manitobans' demand for non-renewable heat sources and cut greenhouse gas emissions
- consulting with Manitoba farmers on new, innovative ways to reduce agricultural greenhouse gas emissions, to achieve the goal of cutting them by 22% of the business-as-usual trendlines, in accordance with the *Agricultural Policy Framework Agreement* with Ottawa
- promoting fuel-efficient vehicles through incentives such as reducing registration fees and increasing research and development into new plug-in hybrid vehicle technology
- launching the Manitoba Aboriginal Energy Efficiency Initiative – in partnership with First Nations – to lower energy bills and reduce fossil fuel use in Aboriginal communities

Greening Downtown Winnipeg

Downtown Winnipeg has seen a remarkable renaissance since 1999. New, green buildings are rising where boarded up or abandoned ones had been. Award-winning buildings such as Red River College's downtown campus and Mountain Equipment Co-op started the trend and have now been joined by the MTS Centre, the Millennium Library, the Smith Street seniors' residence solar wall and the Dalnavert Museum. Also, by investing in streetscaping and creating Waterfront Drive, millions of dollars invested in new downtown condominium development will result in denser, more sustainable urban living situations and a livelier downtown.

The new Manitoba Hydro headquarters currently under construction, consolidating nearly 2,000 staff from across Winnipeg into the downtown, promises to be one of the most energy-efficient large buildings in the world, incorporating state-of-the art energy efficiency technologies in a world-class design while recycling and reusing up to 90% of the materials from the original buildings from the site.

Community Active

Manitoba was the first province to join the federal government's One-Tonne Challenge. Known in our province as the Climate Change Community Challenge, the initiative supports innovative climate change programs throughout Manitoba. Multi-year funding arrangements with groups like Resource Conservation Manitoba and the Manitoba Eco-Network are supporting environmental education and other projects across the province. In Brandon, the city is working to convert its entire public transit bus fleet to run on biodiesel. In Northern Manitoba, several communities are part of a project to heat greenhouses using waste fuel. These projects result in fresh produce being grown closer to home with less reliance on supplies from the South. In Southern Manitoba, communities like Winkler and Morden are actively pursuing opportunities with wind and solar power.

Research and Development

Manitoba is the bus manufacturing centre of North America and through New Flyer, is a hub of major innovations like hybrid buses. In 2002, New Flyer came back from the brink of an uncertain future with the assistance of the provincial government and today is the world's number one manufacturer of hybrid buses with major international sales. Hybrid buses built in Winnipeg are currently running on the streets of cities like Seattle and Vancouver.

This hybrid technology is now being adopted by General Motors to advance the manufacture of hybrid vehicles. Building on that expertise, the world's first hybrid internal combustion engine hydrogen (H2-ICE) bus was tested on the streets of Winnipeg in January 2005.

Manitoba also proudly supports local innovation like the Red River College solar powered car.

WE WILL BUILD ON THIS BY:

- establishing a Hydrogen Centre of Expertise to address long-term approaches for sustainable energy and greenhouse gas reductions including research and commercialization of clean hydrogen technology
- working with international and Manitoba institutions and businesses to advance plug-in technologies for electric vehicles

Biofuels – Ethanol and Biodiesel

In the 1980s, Manitoba was the first province in Canada to construct an ethanol plant (located in Minnedosa) and one of the first to have a biodiesel plant (located in Arborg). Today, the Manitoba government has passed biofuels legislation to mandate the use of 10% ethanol in gasoline products. The mandate will take effect once local production grows to meet the demand and will reduce 150,000 tonnes of greenhouse gasses annually. This growth is already under-

way with the expansion of the $145 million Husky plant at Minnedosa. This plant will be capable of producing 130 million litres of ethanol and replacing the equivalent of nearly one million barrels of imported oil each year. Manitoba's new biodiesel industry is set for rapid expansion, spreading across several rural communities.

Like other climate change initiatives, biofuels create economic as well as environmental benefits. Ethanol will create a new market for 14 million bushels of wheat and biodiesel will create new markets for off-grade oil seed crops that will benefit Manitoba producers. As an added benefit to ethanol production is a high-protein feed called distillers dried grains (DDG) for local livestock producers.

The province has also worked with Manitoba Hydro and the City of Winnipeg to capture, manage and harness the biogas resource from the Brady Landfill site – with a potential of reducing 500,000 tonnes of greenhouse gases – as well as supporting the new Bio-Terre Systems installation at a Teulon hog farm, an anaerobic digester system designed to process waste, capture onsite emissions and produce electricity to meet farm needs.

A New Era for Manitoba Hydro

In the period of major Northern hydro expansion in the 1960s and '70s, dam construction caused flooding and disruption to the lives of many First Nations communities. That era is over. New generation hydro projects are being negotiated in full partnership with First Nations people and have also been redesigned to ensure minimal or no flooding occurs.

For example, the next planned hydro project in Manitoba, Wuskwatim, was redesigned from a 340 megawatt facility to a 200 megawatt facility based on advice from First Nations in the vicinity of the dam. The new design will result in flooding of less than 0.5 square kilometres of land and when in operation, the dam will represent a potential reduction of greenhouse gas emissions of 1.5 million tonnes annually. In addition, the Wuskwatim project includes training, jobs and an equity partnership with the Nisichawayasihk Cree Nation. In Manitoba, hydro development – which produces one of the cleanest forms of energy in the world – is now even more environmentally and socially responsible.

2. Protecting our water

Manitoba's abundance of fresh water sustains our ecosystems, our communities and our economy. Given its importance to our way of life, we know we cannot take our wealth of clean water for granted. Protecting drinking water, improving the health of Lake Winnipeg and conserving water supplies are all priorities that need to be addressed to ensure our water will be protected and preserved for the benefit of future generations.

It is up to all of us to protect and conserve our province's vast water resources. With fully 70% of our water flowing into Manitoba from other jurisdictions, we must also work interprovincially and internationally towards common water quality goals and standards. Recognizing the importance of water to Manitoba was the driving force behind initiatives like the creation of Manitoba Water Stewardship – the first department of its kind in Canada – banning the bulk exportation of water from our province, introducing new planning and water protection laws and launching Operation CleanFarm to recover and properly dispose of old agriculture-use chemicals.

Our second green priority is to protect our drinking water, ground water and our unique network of lakes and rivers. Many actions are being taken to meet this priority.

Ensuring Safe Drinking Water

In 2001, work began to better safeguard drinking water for all Manitobans. Since then, new drinking water legislation was passed, a new Office of Drinking Water was established, 12 new drinking water officers were hired and over $79 million was spent to upgrade drinking water and waste water treatment facilities across the province. In addition, a subsidy for drinking water tests that had been eliminated in the 1990s was re-introduced to assist rural Manitobans with the costs of well water testing.

Water Source Protection

With water better protected at the tap, a public discussion was launched to better protect and provide water stewardship right at the source. This resulted in the release of the *Manitoba Water Strategy* in 2003. Out of that strategy, Manitoba Water Stewardship was formed and a *Water Protection Act* – the first of its kind in Canada - was passed in June 2005. This act is now being implemented by the new department.

The Water Protection Act will put water quality standards under legislation for the first time and establish water quality management zones to better protect sensitive ground and surface water. The act also promotes watershed based planning. In addition, the number of conservation districts has nearly doubled since 1999 and new watershed plans will continue to build on the work of local conservation districts across the province.

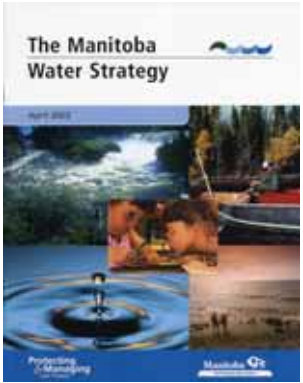
Water Conservation

The Water Protection Act allows the introduction of water conservation measures that will help conserve our water resources and will also reduce pressure on municipal water and waste systems. These measures will also better prepare Manitobans for future droughts.

We are working with livestock producers to identify and improve the environmental performance of older manure storage facilities, built previous to current construction standards. Also, more producers – like Topeaka Farms, one of the largest independent pig operations in the province – are implementing manure management processes like anaerobic digesters, which deal with waste onsite, cut greenhouse gas emissions and produce electricity for both farm use and selling excess power back into the provincial energy grid.

WE WILL BUILD ON THIS BY:

- establishing new regulations to designate water quality management zones that will include new limitations on phosphorous and restrict nutrient loading from municipal waste, septic fields, livestock manure and farm fertilizers in sensitive areas
- implementing a water protection incentive program to build on the Riparian Areas Tax Credit and best management practices developed under the *Agricultural Policy Framework*
- building on initiatives like the *Environmental Farm Plan* program which helps producers improve farm practices, like ensuring fertilizer is going into the crop, not the water
- implementing new regulations that will put water quality standards into law for the first time
- creating new watershed planning authorities that will build on the success of Manitoba's 17 conservation districts
- introducing new water conservation programs to assist municipalities, business, farmers and home owners to lower their water use – programs that will be co-ordinated through *Green Manitoba*, a new provincial agency to foster conservation and energy savings activities.



Lake Winnipeg

Many of the measures in *The Water Protection Act* will also help preserve Manitoba's prairie ocean – Lake Winnipeg. In 2003, the *Lake Winnipeg Action Plan* was launched to address new scientific data that indicates nitrogen and phosphorus loads in the lake are now 10% higher than in 1970. Although these nutrients do occur in our water naturally, higher levels caused by municipal waste, septic fields and fertilizer run-off can result in oxygen depletion of the lake, which in turn allows algae to grow and spread.

The *Lake Winnipeg Action Plan* includes comprehensive measures for the following sectors:

- **Municipal** – Nutrient limits are being incorporated into major facilities such as the cities of Winnipeg and Brandon and will be required for all new industrial facilities. We are developing strategies for nutrient control at small municipal facilities across Manitoba.
- **Rural and Agricultural** – A new manure and mortalities regulation was passed to place limitations on manure spreading and the location of spread fields. The Riparian Tax Credit was introduced and extended to encourage the protection of vegetative cover along rivers, streams, drainage ditches and lakeshores. A soil testing awareness program has been launched to raise awareness about the impacts fertilizer over-application can have on waterways.
- **Individual** – Onsite sewage disposal regulations were updated for the first time since the 1930s to set strict limitations on the location of holding tanks and septic fields for new houses, cottages and developments. In addition, a clean beaches program, including a public awareness campaign for beach goers and cottagers, was introduced in the summer of 2004.
- **International** – In 2004 Manitoba reached an agreement with Minnesota and North Dakota to reduce nutrients flowing into the Red River and into Lake Winnipeg, with a target of reducing the nutrient load on the lake by 10% over the next five years. The agreement was endorsed by the International Joint Commission – the Canada-US body that oversees cross-boundary water issues – and was subsequently submitted to the US Department of Foreign Affairs and the US Secretary of State. In addition, Manitoba continues to work with Ottawa and Washington to ensure projects like the Devils Lake outlet in North Dakota will not result in foreign biota and poor quality water entering Manitoba's waterways. The Manitoba government will also work to ensure there is no resurrection of the Garrison water diversion proposal that was initiated in the 1970s.

WE WILL BUILD ON THIS BY:

- working with the federal government to support more research, greater incentives and inter-provincial and international co-operation to meet the *Lake Winnipeg Action Plan* targets
- working with the City of Winnipeg and the federal government to achieve the *Lake Winnipeg Action Plan* targets through upgrades to the west and north end water treatment plants by 2006. Full nutrient removal will be implemented at all three Winnipeg wastewater treatment plants by 2014
- working with the City of Winnipeg to provide a plan to advance work on combined sewer overflows, in keeping with Clean Environment Commission recommendations
- concluding negotiations with the City of Winnipeg and neighbouring municipalities regarding a capital region approach to providing water and treating wastewater – a major benefit of regional wastewater improvements will be to further reduce nutrient loads flowing into Lake Winnipeg
- new water quality management zones for nutrients regulations will also provide strong scientific tools to protect land from over-application of nutrients contained in fertilizers, animal manure and municipal wastewater sludge – this will protect our valuable water systems, including those used for drinking water

3. Protecting our natural areas

Like our water resources, our natural areas are an important part of our heritage and our way of life. These areas maintain traditional lifestyles such as hunting and trapping, offer recreational and ecotourism opportunities, provide habitat for wildlife and plant populations and keep Manitoba's ecosystems healthy.

Manitoba works hard to protect our natural areas by establishing parks, protected areas and wildlife designations, by instituting sustainable land planning and management practices or by simply creating trails that allow Manitobans to experience nature first-hand. In addition to providing important protection for our natural areas, these initiatives also help support a growing ecotourism industry now estimated to generate over $200 billion worldwide annually and growing at a rate of 29% in Canada over the past few years.

We want to continue to expand opportunities to steward our natural areas. As we do so, we want to pay special attention to those areas that are under threat from climate change, such as the boreal forest, wetlands and the North. This will help ensure our rich natural heritage is there for future generations of Manitobans.

Our third green priority is to protect our pristine land and environmentally sensitive areas and increase access to our natural habitats through the responsible expansion of our network of biking and walking trails. Many actions are being taken to meet this priority.

Parks and Protected Areas

From the tundra of Wapusk National Park to the boreal shield of Atikaki Wilderness Park to the semi-desert of Spruce Woods Provincial Park, Manitoba boasts a diverse natural landscape. Our network of protected areas includes 14 park reserves, two national parks, 43 protected wildlife management areas, 21 ecological reserves and two provincial forests. As well, 28 of our 80 provincial parks have protected status. We are working hard to protect our pristine wilderness areas for future generations while providing sustainable access to natural areas for Manitobans to enjoy today.

In addition to a long-standing commitment to our parks, the Manitoba government, along with local First Nations, has announced support for the nomination of a UNESCO World Heritage site on the east side of Lake Winnipeg.

Both inside and outside of parks and protected areas, Manitoba's wildlife needs special protection. In 2000, legislation was passed to ban the practice of penned hunting of wild animals and in 2002, legislation was passed to better protect our polar bears. In addition, special management plans have been developed for species that the province designates as threatened.

Ecological reserves, such as Little George Island, have been specifically designated to protect nesting birds such as the Caspian Tern. A Watchable Wildlife program has also been launched to provide better

opportunities for Manitobans and visitors to learn about our wide range of wildlife species – from garter snakes to polar bears.

Apart from designating six new provincial parks since 1999, the government has moved significantly on new and expanded park and ecological reserves – like the expansion of Delta Marsh and Tall Grass Prairie Preserve and the protection of urban green spaces like Bois Des Esprits and Omand's Creek.

WE WILL BUILD ON THIS BY:

- setting the goal of permanently designating five new, major protected areas by 2010 – adding to our growing network, including the six provincial parks designated since 1999
- continuing to increase the number of ecological reserves, adding to the five designated since 1999, as well as designating new wildlife management areas
- expanding the number of rivers with special status, including designation of the Hayes as a Canadian heritage river
- introducing new special protection and management designations that recognize unique areas such as Little Limestone Lake, the traditional territories of Little Grand and Pauingassi First Nations, sacred sites and urban green spaces
- building on the foundation of ecotourism training offered since 2002 at Keewatin Community College and further promoting ecotourism opportunities throughout the province

Sustaining our Forests

Manitoba has developed forest renewal rules that are among the strongest in the country by moving toward standards for mixed wood and hardwood stands, not just softwood, to ensure we maintain our diverse mosaic of forest stands across the province. Manitoba actively monitors forestry activities to ensure all harvested areas are actually properly surveyed so that these strong standards are able to be maintained and enforced. We have also implemented a new approach to calculating how much forest can be harvested by modelling forest growth based on actual local forest studies. This approach allows us to better determine the impact of proposed harvesting on the environment, including wildlife habitats and biodiversity.

Manitoba's Boreal Forest and the East Side

Ninety per cent of the east side of Lake Winnipeg falls within the boreal shield ecosystem. The area is home to 36,000 people – 96% of whom are First Nation. The area is unique because it is a part of our province that is a largely inaccessible and undeveloped landscape adjacent to fully developed areas. At the same time, it is also an area that is particularly threatened by the impacts of climate change. By 2050, it is predicted that much of the southern and northern parts of the boreal forest could be lost. Winter ice roads already have shorter seasons that negatively impact transportation safety as well as the cost of getting critical supplies to communities. Action must be taken today to protect this important and valuable area of our province.

In recognition of the critical factors affecting the east side of Lake Winnipeg, development decisions were put on hold to carefully plan for the future of the area through the East Side Planning Process. The process involved 80 community meetings as well as meetings with elders, holding a council with representatives of all 16 First Nations on the east side and a round table of stakeholders.

The report that followed told us that communities want to both sustain the land and have opportunities for community based economic development. With high rates of unemployment, high costs of food distribution and growing costs of health services, stewardship of the land and sustainable economic development are critical to the ongoing survival of east side communities.

As a result of these recommendations, the process was renamed Wabanong Nakaygum Okimawin (WNO) to reflect the important role of First Nations in the stewardship of this unique area. Together, the WNO and the Manitoba government are developing a package of initiatives to support communities and the land where they live.

Some communities have put forward a proposal to have their traditional territories, along with Atikaki Wilderness Park and land on the Ontario side of the border, nominated for a UNESCO World Heritage Site. The Manitoba government supports this effort and has brought together First Nations governments and the governments of Ontario and Canada to further this work.

A land planning initiative is also proposed that will combine traditional and western scientific knowledge to inform future decision making. This program is also intended to provide local job and training opportunities for future community based resource management.

In addition, sustainable economic opportunities will be pursued including energy efficiency and green energy projects, community based sustainable forestry activities and ecotourism. Work is also underway to provide special designations for sacred sites throughout the east side area and forest harvesting is now limited to low historic levels pending recommendations from community plans, currently being developed.

The boreal forest is also being sustained through careful resource management. For example, there is no timber harvesting in a major part of the east side, pending the outcome of the Wabanong Nakaygum Okimawin (East Side planning) process. Several timber companies are currently seeking Forest Stewardship Council certification and are working closely with First Nations communities on local forestry opportunities, in keeping with Manitoba's Sustainable Forestry strategy. Non-timber forest products including teas, soaps and craftwork are being promoted through the Northern Forest Diversification Centre established in The Pas in 2001.

Brokenhead Wetland Ecological Reserve

Designated in June 2005, the Brokenhead Wetland Ecological Reserve is also worthy of special mention. The area contains 28 of Manitoba's 36 species of orchids as well as traditional medicinal plants and carnivorous plants. In the 1990s, this unique wetland was threatened with a proposed drainage project. Today – in partnership with Brokenhead First Nation, orchid enthusiasts and the Manitoba government – this area has been granted Manitoba's highest level of protection as an ecological reserve.

Manigotagan River Provincial Park

Designated in December 2004, the Manigotagan River Provincial Park was originally proposed as a 250 metre buffer strip on either side of the banks of this unique river. In recognition of the value of this beautiful river which is famous among canoeists worldwide, the park boundaries were tripled in size from the original concept.

A unique feature of this designation was the establishment of a River Stewards program to train local people to take care of the river while gaining valuable ecotourism skills. River stewards are individuals who have taken courses in sustainable tourism practices, ecotourism program design and delivery, guiding skills and first aid. They work on the Manigotagan from May to October.

WE WILL BUILD ON THIS BY:

- moving forward with First Nations on the proposed UNESCO world heritage site on the east side of Lake Winnipeg
- providing formal support for the goals of the *Canadian Boreal Initiative*
- ensuring as hydropower development in Manitoba expands that the east side boreal area remains intact and not harmed by any new electricity transmission projects
- working with First Nations communities in the east side area to aggressively promote local sustainable economic development and land use planning
- helping to fund community plans for the east side as part of the Wabanong Nakaygum Okimawim process
- expanding the successful River Stewards program, currently operating on the Manigotagan River, to other east side communities.

Recreational spaces

Manitoba has an extensive network of trails for walking, hiking, biking and skiing. Since 1999, investments have been made in approximately 60 new and existing trails including the Trans Canada Trail. Not only do these trails help us explore Manitoba's natural beauty, they also help us maintain a healthy lifestyle. In addition, recreational trails provide opportunities for local communities to promote tourism and ecotourism.

The Recreational Trail Property Owners Protection Act was recently passed to make it easier to create and maintain trails on private lands. In the coming years, Manitoba's network of trails will continue to be enhanced with a special focus on urban trails and green spaces. Manitobans are also avid campers and the government has improved more than 300 camping spaces since 1999 – expanding opportunities for Manitobans to enjoy our natural environment.

WE WILL BUILD ON THIS BY:

- working with the City of Winnipeg to expand our network of urban trails including multi-use trails along the newly expanded floodway and trails from downtown to the University of Manitoba that will be part of the WinSmart initiative
- continuing to improve provincial campgrounds, expanding and enhancing provincial park facilities including campgrounds and trails

4. Reducing waste and preventing pollution

In the past 10 years, Manitobans have adopted recycling as part of their daily lives. Today, 60% of all Manitobans recycle. Waste reduction activities are compatible with the reduction of greenhouse gas emissions, water stewardship resource conservation and creating new community economic and employment activities. We know we must expand these opportunities for waste reduction and we must also deal with the serious issue of hazardous waste in sites that have been abandoned.

As the supply and the market for recycling continues to grow, new models for administering waste reduction activities are needed. In Manitoba, these models are being worked on together with industry and communities and will include the concept of producer responsibility and the need to address the growing issue of electronic waste. Better co-ordination of waste reduction activities and new targets for reuse and recycling will be realized in the coming years through the new Green Manitoba agency.

Our fourth green priority is to reduce waste through enhanced recycling and reuse initiatives. Many actions are being taken to meet this priority.

Green Manitoba – Bringing Eco Solutions to You

Throughout this green strategic framework, the need for co-ordination of energy efficiency, water conservation and waste reduction activities has been referenced. Green Manitoba is a new one-stop storefront agency that will implement many of the activities outlined in this document. As a delivery organization, Green Manitoba will develop and implement key programs that will foster environmental innovation and community development. This will include community based approaches to promote waste reduction and the efficient use of water and energy, focusing in the immediate term on four waste minimization priorities: tires, blue box materials, household hazardous waste, waste from electronic products (e-waste) and paint.

Product Stewardship

More than 200 local governments receive funds from the Manitoba government to operate residential recycling services from a two-cent levy on beverage containers paid by the manufacturer or seller. Community recycling programs received more than $7.8 million in 2004/05 and recovered 64,613 tonnes of eligible recyclable materials – a recovery rate of 70% of available materials. On an economic scale, the sale of recyclable materials generated an additional $6 million in revenue for Manitoba communities.

Used Oil Recovery

Three million dollars in revenue is generated annually by a product levy established and paid for by members of the Association for Resource Recovery. In partnership with local governments and businesses, 70 EcoCentres and collection facilities have been set up to collect oil, oil filters and containers. Almost 80% of the used oil available for recovery is being recovered and recycled. In addition, 1.6 million filters and 350,000 kilograms of containers were recovered and recycled in 2004.

Tire Stewardship

Tire processors received almost $2.7 million in 2004/05 and local governments received more than $60,000 for collecting tires at landfills. Almost 14,000 tonnes of scrap tires were recycled and kept out of landfills.

The Manitoba government recently announced that the province's tire stewardship board will move to an industry-led model, based on the successful oil recycling program, and receive $500,000 in new funding.

WRAPP Fund

To stimulate organic composting and other waste reduction initiatives, the Waste Reduction and Pollution Prevention (WRAPP) Fund was established in 2000. The purpose of the WRAPP Fund is to provide environmental assistance grants that will help organizations, businesses and local governments move towards more sustainable waste management and prevention practices. The fund supports projects that develop local capacity for sustainable waste reduction and pollution prevention as well as projects that demonstrate the economic viability and environmental benefits of waste reduction and pollution prevention.

WRAPP has supported 147 projects totaling $2.4 million since 2000. Project participants include local municipalities, First Nations and non-governmental agencies. Across the province, recycling rates have increased by double digits every year since the introduction of the WRAPP Fund with a more than 50% increase in recycling in northern Manitoba.

WE WILL BUILD ON THIS BY:

- ensuring better co-ordination and promotion of recycling, water conservation, energy efficiency and waste reduction through the newly-launched Green Manitoba agency
- introducing a comprehensive approach to dealing with the complex issue of hazardous waste sites including site remediation and tougher fines for site abandonment
- strengthening the polluter-pay principle in Manitoba environmental legislation
- continuing to move forward on implementing a producer responsibility model for waste reduction and recovery, in consultation with industry and other stakeholders
- setting new waste minimization targets for priority waste streams, focusing on increasing problem areas like e-waste, as well as setting new targets for water conservation and home heating efficiency

Artist's drawing of Wuskwatim Generating Station Project, to be built on the Burntwood River, about 45 km southwest of Thompson.

5. Growing a sustainable, prosperous economy

The link between environmental sustainability and economic growth is at the forefront of strategies in a number of communities and companies across Canada and around the world.

Between 1998 and 2001, British Petroleum (BP) reduced its greenhouse gas emissions by nearly one-fifth. The company achieved this by integrating emissions caps into managers' performance targets and developing an internal carbon trading system that focused on making the lowest cost reductions first.

BP spent approximately $20 million to implement its reduction strategy but in the process realized almost $650 million in financial savings within just three years. Executives say they are confident there is at least another $650 million in value to be realized from the next step in reduction efforts.

Manitoba's mining, manufacturing and other major industrial firms have led the way in reducing emissions. Manitoba firms such as Tembec have reduced their greenhouse gas emissions by about 70% in recent years by changing from coal and natural gas to clean electricity and biofuels, increasing efficiency in their operations and altering harvesting practices. Hudson Bay Mining and Smelting is another example of a Manitoba company improving its processses, resulting in reducing emission by more than 110,000 tonnes annually.

In Canada, the energy used by the commercial sector accounts for about 13% of total energy demand and about the same amount of greenhouse gas emissions from secondary energy use. In commercial buildings, more than half the energy used is for space heating. Dozens of Winnipeg's major commercial and institutional facilities have significantly reduced their greenhouse gas emissions by using renewable energy from geothermal heat pumps while boosting energy efficiency, including Investors Group, Shindico, Smith-Carter and the Canadian Mennonite College. Many smaller communities have also turned to geothermal technology to heat and cool their arenas, schools and other public facilities.

"BUSINESS CANNOT FUNCTION IF ECOSYSTEMS AND THE SERVICES THEY DELIVER – LIKE WATER, BIODIVERSITY, FIBRE, FOOD, AND CLIMATE – ARE DEGRADED OR OUT OF BALANCE."

— WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT, MAY 2005

In Manitoba, residential heating and cooling needs are generally met by either natural gas or electricity. However, there is a more energy efficient option – geothermal heat pumps. They are one of the most environmentally beneficial heating systems available and offer homeowners the opportunity to significantly reduce heating costs. Manitoba Hydro has launched the Geothermal Heat Pump Program to make this renewable energy technology more accessible to Manitoba homeowners.

Manitoba has become a leader in earth energy systems in a very short time – creating a new industry full of opportunities as well as offering savings to both homeowners and commercial building owners. New business growth is an area we all want to promote. When we do this in an environmentally sustainable way, we maximize the benefits from these economic activities. Today, Manitoba Hydro actively works on economic development in Manitoba's manufacturing, information technology and biotechnology sectors. For example, Manitoba Hydro worked with biotechnology companies that were expanding their plants to ensure their expansions were as energy efficient as possible.

Our fifth green priority is to partner with Manitoba businesses and communities to fuel economic growth that will capitalize on our clean energy and natural environment advantages. Many actions are being taken to meet this priority.

Hydropowering the Economy

Ninety-seven percent of Manitoba's electricity is generated from hydropower. In the 1960s, hydro development provided abundant energy to Manitobans but also led to flooding and hardship for northern First Nations communities.

Today, there is a new era of co-operation between Manitoba Hydro and First Nations. All new developments are undertaken in partnership with First Nation people and have been redesigned to ensure little or no flooding occurs. For example, the next hydro project in Manitoba is known as Wuskwatim. It will be a more than $1 billion investment generating 200 megawatts of electricity and will be completed as a one-third partnership with the Aboriginal community. The design of this project results in a flooding projection of less than one-half a square kilometre of land – about the size of Winnipeg's Polo Park shopping centre. This compares to 900 square kilometres of flooding for projects elsewhere in the country. In addition, the Wuskwatim project includes training, jobs and an equity partnership with the local community.

Through a focus on partnerships and the environment, real long-term economic development growth and wealth creation can take place. This new approach focuses on training and skills development and includes a $60 million investment from the federal and provincial governments.

"PRESERVING THE ENVIRONMENT IS ESSENTIAL FOR ANY SUSTAINABLE ENERGY PROJECT."

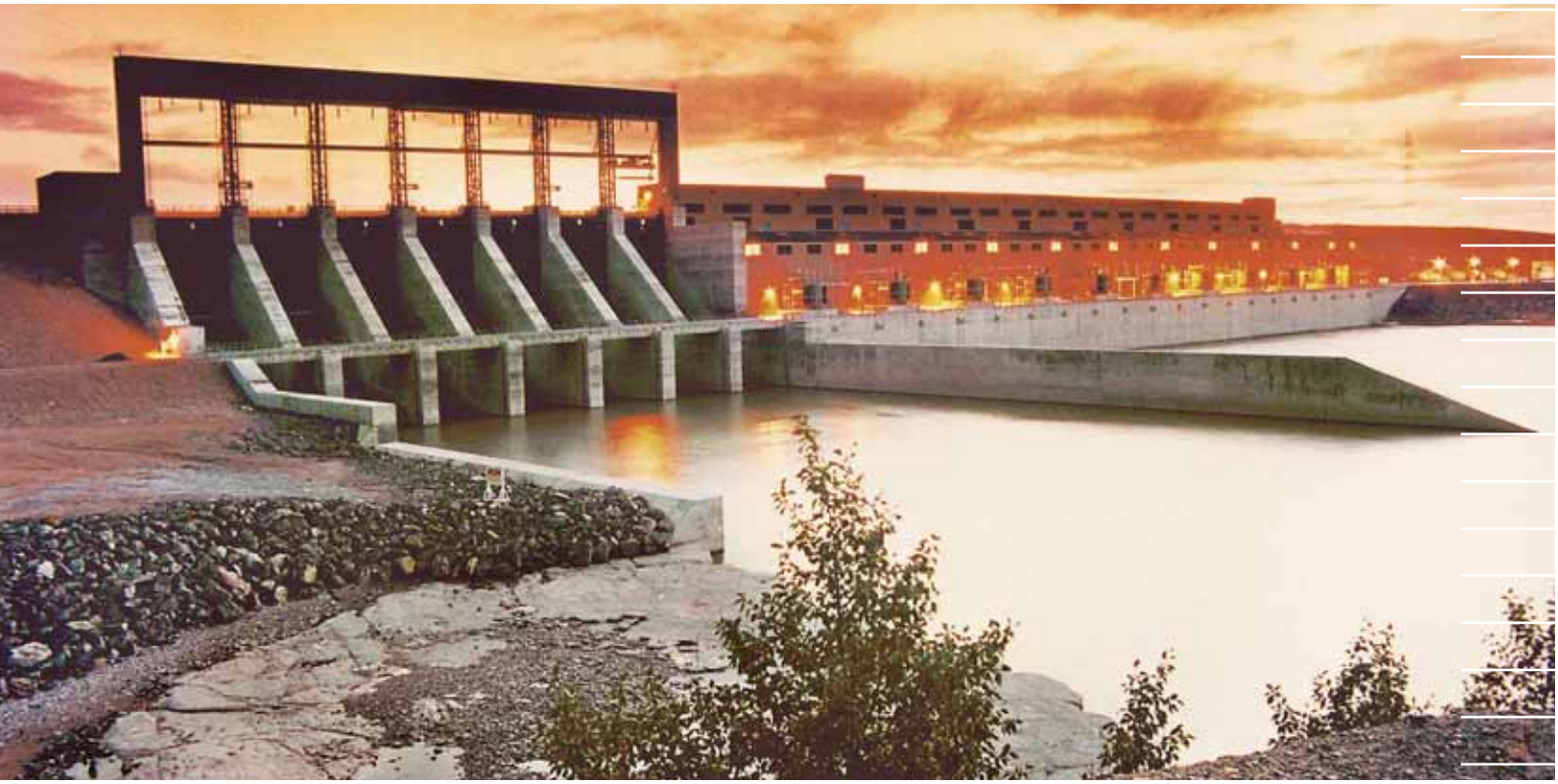
— BUSINESS COUNCIL OF MANITOBA, MAY 2004

Of the 5,000 megawatts of clean hydropower that has been developed in Manitoba, there are still approximately another 5,000 megawatts that could be developed without the negative environmental and social impacts of the 1960s and '70s.

In coming years, future power sales to neighbouring jurisdictions currently dependent on fossil fuels like coal and natural gas could trigger the development of two new generating stations – Keeyask and Conawapa. These generating stations would proceed under partnership arrangements with local First Nations and could trigger $5 billion to $10 billion in new investment while generating 75,000 person-years of employment. Potential opportunities also exist to bring more renewable energy online as new transmission capacity and the national east-west grid is expanded.

Future hydro development could be good news on many fronts:

- First Nations will benefit from long-term income potential and local employment.
- The environment will benefit from new generating stations that have minimal negative impacts.
- Industry in neighbouring provinces (ex: Ontario) will benefit from a source of clean, secure and renewable power.
- Manitoba businesses and employees will benefit from major capital investments and new economic opportunities that will be generated by hydro development.



Bioproducts

Bioproducts will form an important part of Manitoba's approach to address climate change, sustainable industrial development and to stimulate markets for agricultural and forest products. Bio-based products and processes represent an upcoming industrial revolution that will see chemicals, materials and fuels derived from trees and crops. These new fuels will supplement and, in some cases, replace fossil fuels like coal, oil and natural gas. Positive steps have already been taken towards major expansion of ethanol and biodiesel production – like the new ethanol plant in Minnedosa and the upcoming mandate for 10% ethanol in most gasoline pumps.

A strong bioproducts strategy must also include a broad approach for all annual renewable industrial crops that may provide green and clean feedstock to supply a number of industries. A vibrant bioproducts sector will attract and grow companies that can take advantage of Manitoba's renewable resources while providing jobs and helping expand the rural economy.

WE WILL BUILD ON THIS BY: working with the public and private sectors to develop a framework to ensure Manitoba is able to fully capture the opportunities that the new bioeconomy promises.

Geothermal Industry

To date, more than 4,000 ground source heat pump (GSHP) units have been installed in Manitoba – generating annual sales of over $25 million. This has led to the development of new industry opportunities including new training and development – 56% of all GHSP installers are now trained in Manitoba.

The initial phase of Winnipeg's Waverly West housing development includes plans for the installation of GSHPs for up to 2,300 single and multi-family housing units.

WE WILL BUILD ON THIS BY:

- promoting geothermal development in Waverly West as an economical and sustainable alternative to natural gas
- creating a project partnership between Manitoba, Canada, Manitoba Hydro and public and private land developers to undertake comprehensive geothermal development
- piloting a heat pump leasing program to help foster a market acceptance of geothermal technology and aligning this and related clean energy initiatives with Manitoba's and Canada's Kyoto commitments

Manitoba Aboriginal Energy Efficiency Initiative

Manitoba is committed to working with the province's 62 First Nations to address the critical issues and opportunities related to energy consumption and climate change. To this end, we are piloting with the Island Lake First Nations communities on the east side of Lake Winnipeg to introduce an energy efficiency and housing retrofit program. This project will substantially reduce energy use and lower bills for over 1,400 households. It will also reduce carbon dioxide emissions by cutting oil and propane use. The reduction in oil and propane use will also mean less fuel will be required to truck these commodities into the communities.

This project will serve as a template for community-based programs with other participating First Nations. It will reduce fossil fuel use, lower energy bills, increase skills and provide new jobs. It will also foster economic development in Aboriginal communities and offer First Nations new opportunities to benefit from a Manitoba industry that generated $50 million during the past three years.

Low Income Energy Efficiency Initiative

An aggressive new project to reduce the energy burden for large numbers of low-income households in Manitoba – the Low Income Energy Efficiency Initiative (LIEEI) – will be led by Manitoba Hydro's Power Smart program in partnership with local communities and the EnerGuide for Houses program. LIEEI will retrofit almost 12,000 public and private buildings occupied by low-income families to significantly reduce their natural gas and other energy bills, reduce greenhouse gas emissions and enhance local employment opportunities. Other benefits of the program include increased disposable income for low-income families, job training and local employment opportunities and greater financial security for low-income families during periods of uncertain energy costs.

Hydrogen Strategy

Hydrogen is the ultimate fuel of the future. It is both clean and available and does not require energy imports. Hydrogen is important to Manitoba as a future energy opportunity. Manitoba's abundant hydroelectric resources provide the province with a natural advantage for the production of clean hydrogen. With the lowest electricity prices in North America, Manitoba will be the first jurisdiction on the continent where hydrogen can be produced economically via electrolysis. Developing hydrogen use will require a variety of new technologies, products and services such as fuel cell buses and hydrogen refueling stations. This will also mean economic opportunities for Manitoba companies and new, high technology jobs.

In 2003, Manitoba released its hydrogen development strategy that outlines a hydrogen vision which positions the province for the future. The government has also worked on hydrogen development in partnership with private sector companies like New Flyer and Kraus Global.

WE WILL BUILD ON THIS BY: establishing a Hydrogen Centre of Expertise to pursue the opportunities and address many of the technical challenges that still remain with hydrogen technology – the centre will focus on research and commercialization including ongoing collaboration with the world class facilities at Whiteshell Laboratories in Pinawa.

Wind Power

The St-Léon wind farm project demonstrates the significant private industry potential in wind power development. The completed project will represent $200 million in private investment that has supported the development of a 99 megawatt wind farm. This is just the first step toward more large-scale projects that will represent significant local development and provide income for rural municipalities and rural land owners.

WE WILL BUILD ON THIS BY:

- committing to 1,000 megawatts of wind development in Manitoba over the next decade which will grow wind power in the province to 10 times the size of the St-Léon project – representing a private investment potential of $2 billion
- providing significant community development and local ownership opportunities, including with small wind projects where farmers and others can sell small-scale wind power back into the energy grid

Fishing Industry

Manitoba's 100,000 lakes cover approximately 17% or 101,600 square kilometres of the province's land mass. Across the province, our lakes, rivers, streams and marshes are home to important fish habitat.

In Manitoba, fishing is valued for both its recreational and commercial benefits. For over 100 years, Manitobans have been commercially harvesting fish. The majority of production comes from Lake Winnipeg and Lake Manitoba but several smaller lakes in southern and northern Manitoba are also fished. Since almost all of the commercial production is sold outside of Canada, the $30 million in annual sales represents a significant contribution to Manitoba's economy.

A healthy fish habitat provides sustainable benefits to the commercial fishing industry as well as sport and domestic fishing throughout the province.

Over the past decade, significant work has been completed to prevent the loss of healthy fish habitat. In addition, Manitoba is focusing on enhancing and rehabilitating areas with lost or degraded habitat.

One such program – Manitoba Fisheries Enhancement Initiative – has contributed funding for the enhancement, restoration and creation of fish habitat in Manitoba. Under this program, revenue generated through a portion of fish sport and commercial licence sales is used to fund projects that address lake aeration, fish passage, rearing and spawning enhancement, stream rehabilitation and population management as well as educational and promotional materials.

Growing Opportunities in Agriculture

Manitoba's agriculture sector is diverse and dynamic, contributing billions of dollars each year and 62,000 jobs to Manitoba's economy. In fact, one in every nine Manitobans is employed in the agricultural industry.

There is a strong future in this growing sector that contributes significantly to the social and economic well-being of Manitoba. Manitoba's $3 billion agribusiness sector is projected to double in size in the next 10 years. For example, Manitoba pork exports have tripled in the past five years to 30,000 tonnes. This has been accomplished by meeting the specific needs of foreign markets in Europe, Latin America, Asia-Pacific and the Middle East. Our potato industry is also worth $350 million in exports. In addition, local farmers are diversifying to meet global needs with specialty crops – like hemp, of which Manitoba is by far the largest producer in North America – and exotic products such as ostrich and wild boar.

The increasing role of technology in food production and processing, advancements in food products with nutraceutical and health benefits and new product developments are changing the way agricultural operations are run. Emerging opportunities in value-added industries are also opening doors to a widening range of income streams.

A sustainable agricultural environment involves preserving and enhancing the province's natural resources including soil, water and air as well as native flora and fauna. The long-term well-being of farm families and rural communities will require an integrated environmental, social and economic approach to agriculture.

New areas of growth include the agri-energy sector. In Manitoba, locally developed farm-to-energy opportunities are providing economic prosperity, making improvements to our environment and meeting the increasing demand for renewable energy.

When it displaces a fossil fuel like gasoline or diesel, ethanol produced from renewable sources and some waste products reduces net greenhouse gas emissions. For example, ethanol produced by Mohawk in Minnedosa has 40% fewer greenhouse gas emissions than an equivalent amount of gasoline. Economically, the sales value of Manitoba's new ethanol and biodiesel industries is expected to surpass $100 million annually and reduce imports of fossil fuels by a comparable amount.

In addition to the environmental benefits, producing and consuming ethanol has a number of economic benefits for Manitoba:

- reducing gasoline imports
- stabilizing agricultural income
- creating alternative markets for agricultural products
- stimulating sustainable economic development and job creation in rural areas

Ecotourism

Ecotourism is a growing and thriving portion of Manitoba's multimillion-dollar tourism industry. From viewing polar bears in Churchill to canoeing on world class wilderness rivers, to walking one of the province's thousands of excellent trails, Manitoba has a tremendous wealth of ecotourist experiences and a huge potential for growth. Manitoba is a leader in promoting initiatives like sustainable sport fishing through the Master Angler Awards program, resulting in an approximately 90% catch-and-release rate. This helps preserve and protect our fisheries. In 2004, over 11,000 people applied to be Master Anglers and this year saw two new fish species added to the program. Our Watchable Wildlife program, in partnership with groups such as the Manitoba Naturalists Society and Ducks Unlimited, ensures we are developing and promoting a myriad of sustainable wildlife viewing opportunities for Manitobans and visitors alike. And of course, Churchill is our world-renowned ecotourism destination, generating $23 million in economic activity annually.

WE WILL BUILD ON THIS BY:

- growing the Aboriginal tourism sector including implementing our *Aboriginal Tourism Strategy* over the next three years to focus efforts on the development of the industry across the province
- working with communities on the east side of Lake Winnipeg to develop sustainable nature-based tourism experiences in this unique pre-Cambrian shield and boreal forest region, which promises unmatched wilderness sport and wildlife-viewing opportunities – including pursuing UNESCO world heritage site designation for the Atikaki Provincial Wilderness Park area
- aggressively promoting Manitoba as a world class ecotourism destination across Canada and internationally

6. Fostering a green and healthy society

The well-being of Manitoba families and the health of our environment are linked at many levels. If we could not provide Manitobans with basic materials from the ecosystem – such as food and water – the health and very nature of our society would soon break down. The more of these basic materials that can be provided locally, the more solid a base we can build for our families, communities and businesses to thrive. If these basics must come from far away at great energy and expense, the relative cost of obtaining them could eventually cause scarcities and increasing hardships.

Our physical health is deeply affected by the environment. If we don't have clean water and air, our health could be at risk. Clearly, keeping Manitoba's natural environment healthy is in all of our best interests.

Beyond the very basics to sustain life, the environment and its various ecosystems support virtually everything that makes up personal and social well-being such as food, livelihood, shelter and access to goods, as well as less tangible factors like personal safety, family and community bonds, respect for others and social order.

When we create a greener Manitoba, we will also create a healthier Manitoba. However, government cannot make this happen on its own. We must all adopt greener, healthier attitudes to the way we live our lives and conduct our business.

Our sixth green priority is to raise Manitobans' quality of life and advance healthy communities and families through ongoing promotion and education about greener lifestyles and work practices. Many actions are being taken to meet this priority.

Environmental Education

Since 1999, the Manitoba government has put a major emphasis on environmental education in our schools. Sustainable development and the environment are now a significant part of the science and social studies curriculums. In the past year alone, we produced new learning resources for Grade 5 (climate change) and Grade 6 (energy conservation). We also developed Senior 2 geographic information systems tools for students to learn about biomes, sustainability and ecosystems and held a two-day forum on sustainable communities with over 260 Winnipeg middle and secondary students and teachers.

WE WILL BUILD ON THIS BY:

- establishing a working group of senior leaders from the business, community and public sectors to help develop and implement new policies and materials to promote sustainable development education in Manitoba
- implementing our *Education for Sustainability Action Plan* which focuses on helping students acquire knowledge, skills and values to contribute to a green future
- establishing a new Education for Sustainable Development Grant with Manitoba Hydro to support 10 schools in providing enhanced teaching about the environment and sustainable development

Healthy Living

Healthier living practices result in fewer negative impacts on our natural environment. The provincial government has created Manitoba Healthy Living, a new department to help Manitobans take a more active role in their own personal health through lifestyle choices like physical activity and better diets. By making healthier choices and working together to create environments that support healthy lifestyles, we can reduce our risk for illness and injury. Also, initiatives like Healthy Schools, In Motion and Healthy Baby Manitoba are helping thousands of Manitobans lead healthier lives every day.

Green and Growing Neighbourhoods

At the heart of the government's vision for green, sustainable communities is Neighbourhoods Alive!, which recently celebrated its fifth anniversary. It is a government-wide initiative that has committed over $2.65 million to some 400 community projects. The projects include supporting healthy neighbourhoods with safety and wellness initiatives, providing after-school recreation programs for kids, enhancing neighbourhood parks and facilities and building local community leadership. Also, the Building Communities initiative with the City of Winnipeg has focused on the physical needs of older communities.

WE WILL BUILD ON THIS BY:

- introducing the Low Income Energy Efficiency Initiative (LIEEI), which will begin helping hundreds of inner-city Winnipeg families make their homes more energy efficient and reduce their home heating bills
- expanding Neighbourhoods Alive! to seven new neighbourhoods with $300,000 in new funding and core funding for existing programs will now continue through to 2011

Manitoba Round Table for Sustainable Development

The Manitoba Round Table for Sustainable Development is an advisory body to the provincial government. It provides advice and support to decision makers about the responsible use of resources, land and the environment as well as social and economic development decisions for the province. The round table is an integral component of the province's sustainable development strategy.

Members of the Manitoba round table represent a broad range of experience and technical expertise as well as regions and sectors of the province. They assist government in making informed decisions about implementing sustainable strategies in communities and regions across Manitoba. To reflect government's commitment to sustainable development and to emphasize the cross-departmental responsibilities associated with its implementation, six cabinet ministers are also members.

Sustainable Development Innovation Fund (SDIF)

The SDIF provides funding for the development, implementation and promotion of environmental innovation and sustainable development projects delivered by local governments, industry, community organizations, youth groups, Aboriginal organizations and First Nation communities.

SDIF grants are provided through several priority program areas. Proposed projects must address one or more priority areas and achieve or demonstrate measurable progress towards the fund's objectives. They must also be environmentally and ecologically sound, promote a sustainable approach, have clear environmental benefits and take into account benefits to the community and the economy. Wherever possible, projects should also include a youth component.

Current projects include:

- establishing a self-financing organic farm at Fort Whyte Centre that will provide training and employment opportunities for refugees and inner city youth
- completing a traditional land use study based on First Nations Values at Hollow Water First Nation
- holding a national sustainable campuses conference at the University of Manitoba with the Sierra Youth Coalition

7. Greening the provincial government

The Manitoba government recognizes that it must lead by example when it comes to being a good steward of our natural resources. The province is committed to pollution prevention and protecting the environment in its daily activities.

Our seventh green priority is to ensure the provincial government leads by example by operating more sustainably, introducing more energy-efficiency, reducing waste and saving taxpayers money. Many actions are being taken to meet this priority.

- The Demand Side Energy Use baseline audit of 85 Manitoba government buildings was completed in 2003 and found that 2001/02 greenhouse gas levels in government buildings was already 8% below 1990/91 levels.
- Through education, feedback and direct program support, waste minimization initiatives have been introduced throughout more than 300 government buildings.
- The Manitoba government now uses 30% post-consumer waste recycled paper.

- At the Legislative building, ground irrigation systems use water drawn from the river; organic products are widely used to maintain lawns; and garden and lawn materials are collected for composting.
- A solar wall project was installed at a seniors complex owned by the Manitoba Housing and Renewal Corporation (MHRC) in 2002.
- The provincial light duty vehicle fleet currently includes 141 alternative and flexible fuel vehicles – there are 12 gas electric hybrids and 129 E85 flexible fuel vehicles which are capable of running on a blend of up to 85% ethanol. As well, a further eight gas-electric hybrids, 48 E85 flexible fuel vehicles and one diesel Smart Car have been ordered to replace older fleet vehicles.

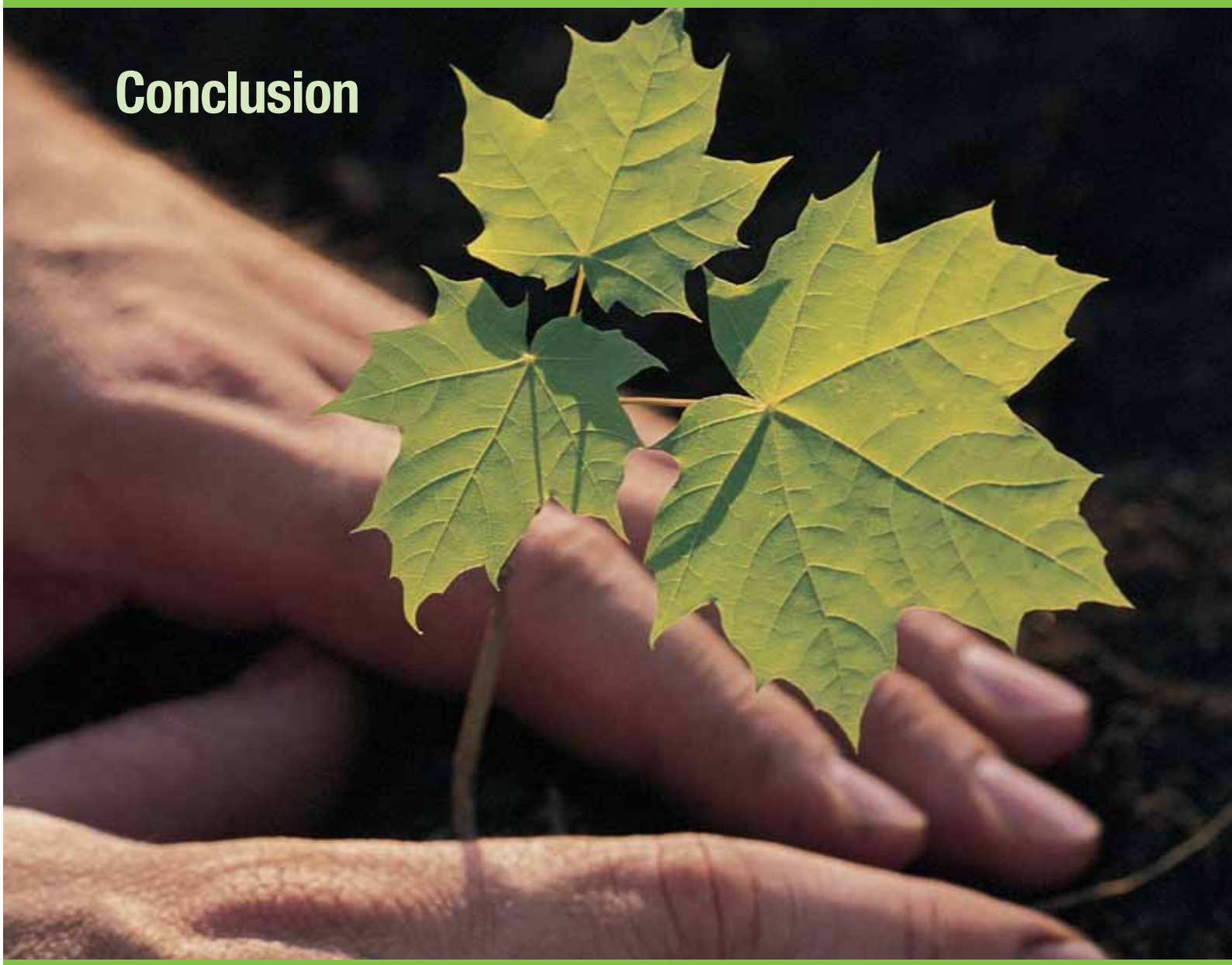
Public schools are adopting energy efficiency programs and are actively involving staff and students in monitoring energy use. In addition, new school buildings must now meet energy efficiency standards and new waste reduction strategies will be co-ordinated by Green Manitoba.

The Centre for Sustainable Transportation is relocating to Manitoba. It will be affiliated with the University of Winnipeg and will provide applied research and training and initiate a national Centre of Excellence in Sustainable Transportation. The Manitoba government has committed $500,000 to this project over five years.

WE WILL BUILD ON THESE INITIATIVES BY:

- developing a truck-stop electrification demonstration project so trucks stopping at the demonstration site will be able to use electric power to decrease engine idling which will have the potential to reduce greenhouse gas emissions by 2.425 tonnes per day
- increasing recycling in all government premises leased or owned within two years
- advancing building environmental controls within two years in all buildings
- piloting lighting initiatives in government buildings like increasing use of energy-saving light emitting diodes instead of standard lighting
- continuing to replace fluorescent light ballasts with low energy versions
- expanding the use of geothermal and other energy sources, especially for new or major reconstruction
- phasing out the use of ozone-depleting substances in chillers and other equipment
- continuing to work with the federal government to establish an E85 fueling station in Winnipeg
- promoting commuter challenge transportation options for employees year-round – the Manitoba Government has been an active participant in the annual Commuter Challenge, placing first for employee participation three years in a row

Conclusion



Manitoba's *Green and Growing Strategic Framework* demonstrates that we are working to protect our environment while also growing our economy in a sustainable way. Together, we are taking action to protect our climate, our water and our natural areas and reduce waste through reuse and recycling.

Manitoba will continue to be a leader in this field as we work to discover new economic opportunities in everything from clean energy development and energy efficiency to non-timber forest products and ecotourism.

Green and Growing has outlined the key challenges and opportunities facing us as we move forward. Through a sustained focus on the opportunities, our province will ensure environmentally sustainable communities and achieve a prosperous future for all Manitobans.

For more information go to www.gov.mb.ca

Or contact us at 1-866-Manitoba (1-866-626-4862)

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