Department of Energy, Science & Technology

Strategic Direction
at July 2005

C O N T E N T S

Why are we here?

Purpose of the Department of Energy, Science & Technology
The Government of Manitoba created the Department of Energy, Science and Technology (EST) in September 2002, to create a focal point for activities designed to increase the capacity of Manitobans to create a more innovative, and therefore resilient, society.

A guiding base document for the department is the *Manitoba Innovation Framework*, launched in 2003, which outlines the Government's innovation targets and focus areas.
http://www.gov.mb.ca/est/innovation/index.html

Multiple capacities in the team
The new department brought together a diverse set of people and skills from numerous areas of the Manitoba Government, presenting a challenge to help them all see the connection between their work and those of others in the new team.

The types of activities integrated within the new department included:

- energy policy, programs and investment, and climate change response policy and programs;

- Improved electronic connectivity for Manitobans, leading to positive community development and partnership, as well as providing a channel for more efficient and sophisticated delivery of public services;

- programs to place internet capable hardware in community access places, and to provide web tools, video conferencing tools and other transformative technology for community self-development;

- activities related to transforming government services through better tools, processes and relationships;

- electronic connectivity for the school system and its associated community benefits;

- economic development and partnership activities related to Knowledge Enterprises (including life sciences/ biotech and information technology businesses), traditional energy generation, new alterative energy generation, environmental industries and their associated technologies and social benefits;

- institutional research capacity and projects, industrial prototyping and testing facilities, research and innovation policy;

- day to day management of the critical information & communications technologies (ICT) that support government's activities

- forward planning to ensure that our ICT infrastructure helps government to become as effective as possible in meeting citizens' needs.

The Challenge

Governments face an increasing demand from citizens for more innovative service delivery, and there is no end to the potential technical solutions available to do that. But we also work in an environment with limited financial resources and fewer employees than in the past. Ingenuity is critical; priorities can no longer be defined by the funds available. Funding is only one of the levers we have to stimulate capacity for innovation.

We need to accompany strategically placed funding by ongoing partnering and facilitation activities, and then assessment of progress. All of these elements need to be considered at once; significantly neglecting any one of them could make it impossible to benefit from the work done in other areas of the system

Information Technology is an example of an area where it is critical to understand changing operational needs and processes, in order to be successful. So just by virtue of owning responsibility for effective enterprise ICT, it is critical that we set the tone for change resilience and flexibility within government. Since we are responsible for far more than that, it becomes even more important to be a positive example. We want to do this by modelling and piloting best practices, change resilience and effective cross-functional partnering.

EST's strength is in acting as a catalyst for positive change.

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EST's VISION
for the future

Manitoba is the place where innovation flourishes, ideas grow and people prosper.

EST's MISSION
Activities we undertake to move towards our vision

We build the **capacity** for Manitobans to prosper through innovation by:

- Creating strategic partnerships,
- Encouraging investment,
- Enabling equitable access to the right tools,
- Promoting awareness and knowledge, and
- Championing critical policy development

EST's CULTURE AND VALUES
Targets for a shared working culture

Value statements define the organizational culture that we seek, and the standards that guide our day to day actions. Our leaders have responsibility to nurture the culture within our department.

- The **people** of Manitoba are at the centre of our vision.

- We seek and embrace **opportunities** that arise from positive change.

- **Collaboration** is the cornerstone of our philosophy and sets the groundwork for our actions, as we interact with our stakeholders to help them achieve their goals.

- We value **resilient,** flexible thinking and actions, remaining unsatisfied with the status quo and with organizational barriers.

- As **facilitators,** we add value by enabling the exploration of new ideas and knowledge in our strategic priority areas.

- We **challenge** each other to find better solutions and use **innovation as the thread** to implement them creatively, employing a long-term, **sustainable** and strategic view.

- We **expect** and **support** risk-taking to achieve our goals.

- Government processes and policies guide us and preserve **accountability** to citizens, while keeping us **focussed on government goals**.

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LEADERSHIP COMMIT-MENT

How we hold our leaders accountable

We expect our leaders to be committed to creating and sustaining an environment of integrity, respect and accountability. This is the statement they built.

Our expectations of our Leaders are that they work to:

1.   Establish a safe and respectful work environment that nurtures **creativity, innovation, organization, and productivity**;

2.   **Celebrate the achievements** of our employees;

3.   Demonstrate **respect for all people** and appreciate the diversity of our employees;

4.   Cultivate an environment that encourages **open communication** and the exchange of ideas and concerns;

5.   Provide **learning and development opportunities** to achieve people development goals.

STRATEGIC PRIORITIES

Areas of major focus, to which organizational resources must be directed

EST's Five Strategic Priorities:

- Green Strategy, Energy & Climate Change: **Drive implementation of the Green Strategy and maximize Energy & Climate Change opportunities for Manitoba**
- Community & Economic Development: **Create major opportunities for Community & Economic Development through 'new economy' industries and technology**
- Research Capacity: **Significantly improve Manitoba's scientific research capacity and the environment for our researchers**
- **Service Transformation:** Drive & support Service Transformation in Government
- **ICT Infrastructure:** Find the top opportunities to use and expand Government's ICT assets as strategically and innovatively as possible, to benefit Manitobans

Energy, Science & Technology is extremely well positioned to support the kinds of government priorities that require *integration* and those that require *technical, partnering or research infrastructure.*

Which key government priorities are supported by EST's priorities?

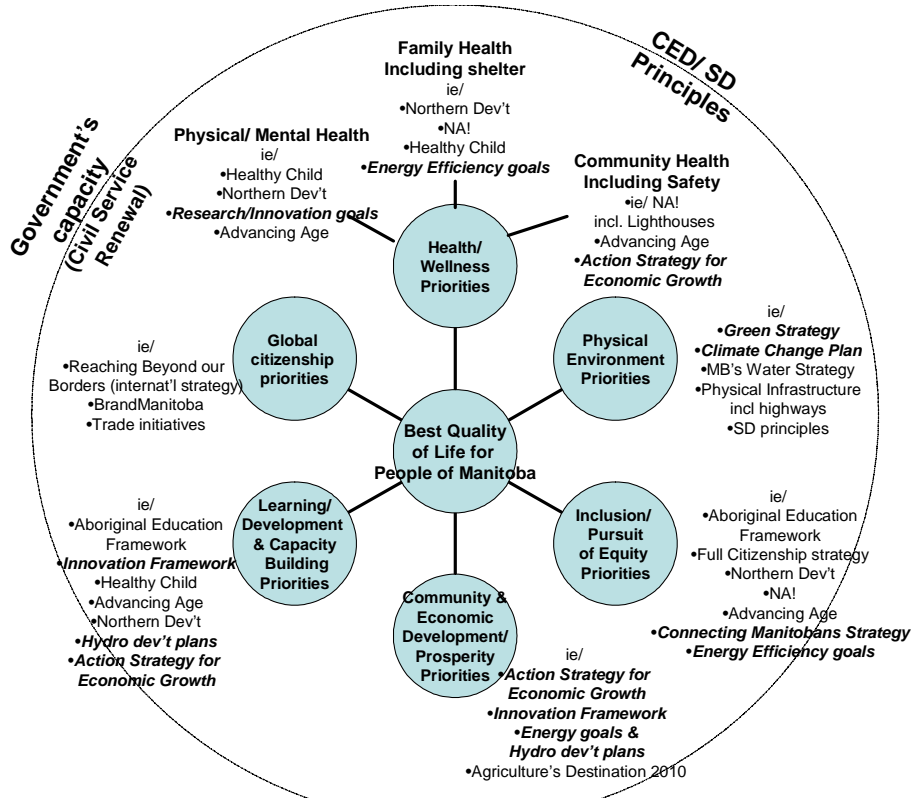| EST Strategic Priority	Community & Economic Development	Sustainable development	Renewal Strategy	Healthy Child Manitoba	Advancing Age	Full Citizenship	Northern Development strategy	Neighbourhoods Alive!	Aboriginal Issues Cttee of Cabinet	Aboriginal Education & Training Framework	MB Aboriginal Education Action Plan	MB Green Strategy	Climate Change Action Plan	MB Water Strategy	MB Innovation Framework	Connecting Manitobans (Broadband strategy)	MB Action Strategy for Economic Growth	Destination 2010	brandmanitoba	Beyond Our Borders international strategy	ICT Restructuring	Finance/Admin clustering	HR Competencies
Drive implementation of Green Strategy and maximize Energy & Climate Change Opportunities for Manitobans	✓	✓		✓			✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓			
Create major opportunities for Community & Economic Development, through 'new economy' industries and technology (including broadband)	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓		
Significantly improve Manitoba's scientific Research Capacity and the environment for our researchers	✓			✓	✓		✓		✓			✓	✓	✓	✓	✓	✓		✓	✓			
Drive and Support Service Transformation in Government			✓				✓	✓	✓						✓	✓			✓		✓	✓	✓
Find the top opportunities to lever and expand Government's ICT assets as strategically as possible, to benefit Manitobans	✓		✓				✓								✓	✓	✓		✓		✓		

Because the key priorities are highly inter-related, many of them will of necessity 'flow' into each other. Furthermore, they will also flow into activities that occur within other parts of the Manitoba Government (especially Industry, Economic Development & Mines, Education, Training & Citizenship, Advanced Education, Healthy Living, Health, Conservation and Water Stewardship activities). Their common denominator is innovation.

Our focus always is to take the implementation path that benefits communities at a local level, and to ensure we can promote Community Economic Development principles. A discussion of the importance of innovation for successful communities is available in the introduction section to our policy document, The Manitoba Innovation Framework.
http://www.gov.mb.ca/est/innovation/index.html

How do EST's priorities support Government of Manitoba Priorities?

There are some key provincial government priorities, within which we must operate and make a contribution. These guide our departmental planning process.

At EST, the priorities (highlighted above) to which we must contribute most directly include:

- Manitoba Innovation Framework
- Manitoba's Action Strategy for Economic Growth (PEAC)
- Connecting Manitobans Broadband Strategy
- Manitoba's Green Strategy
- Climate Change Action Plan
- Civil Service Renewal Strategy
        … all within the framework of Community Economic Development
            and Sustainable Development Principles and Goals

Other government priorities which EST is key in supporting include:

- Healthy Child Manitoba
- Advancing Age: Promoting Older Manitobans
- Full Citizenship: A Manitoba Strategy on Disability
- The Northern Development Strategy
- Neighbourhoods Alive!
- Aboriginal Education & Training Framework
- Destination 2010: for Agriculture, Food and Rural Initiatives
- Manitoba's Water Strategy
- brandmanitoba
- Beyond Our Borders: framework for Manitoba's International Activities

Further summaries and links relating to these priorities are described in Appendix A.

Disruptive Innovation, Partnering and Renewal

How does ES&T focus its available resources to address our priorities?

1. By focusing on transforming or re-framing our problems through Disruptive Innovation,
2. By managing relationships and partnerships (internal and external) and
3. By developing our capacity, through our Renewal Strategy

Disruptive Innovation:

Disruptive Innovation describes revolutionary outcome changes that emerge from leadership activities where there is
- disruptive technology with significant possibilities,
- aggressive and clear target setting, and
- quick and visible change in an organization or a system.

Re-framing the problem is the leadership challenge, particularly in the public sector.

A presentation describing the concept of Disruptive Innovation, using energy as an example, is available at http://www.gov.mb.ca/est/strategic/innovation_challenges.pdf John Clarkson delivered this presentation to the Innovation in Canada Conference in February 2005.

Matrix management approach:

The work we undertake in Energy, Science and Technology is very team- and project-oriented, and we can only be successful through approaches that are unimpeded by the organizational structures we have in place to manage our resources.

As a result, we seek a highly matrixed management approach, which must in turn respond to the larger government structure and its priorities. We are obliged not only to plan and deliver against Energy, Science & Technology priorities, but also to fit those into the larger set of government priorities for which we are all responsible.

'Matrix management' is a term describing a management environment where projects cut across organizational boundaries and involve people who, in addition to reporting to their regular line manager, may be accountable from time to time to one or more project managers or other leaders in other functional groups as well. Often in such an environment, project teams form and dissolve horizontally, based on need, and may often include people from outside the organization. It is a way of working with people that is commonly used in organizations that are highly project-focussed and need to work across functions to achieve shared goals.

How does a matrix management approach help to address our priorities?

Strategic Priority areas: **Other critical operational activities:**

EST Organizational Units:	Green Strategy, Energy & Climate Change opportunities	Comm'ty / Econ Develop't goals	Research goals	Service transform'n goals	ICT asset leverage goals	Regulatory & legislative frameworks (internal or external)	Program and Service delivery (internal or external)	Planning, monitoring, leading and developing
Energy & Climate Change Initiatives	O	O				✓	✓	✓
Manitoba Information & Communications Technologies (MICT)		C		C	O	✓	✓	✓
Legislative Bldg Info Systems (LBIS)				C			✓	✓
Broadband Initiative	C	O		C	C	✓	✓	✓
Community Connections	C	C	C	C	C		✓	✓
Manitoba Education Research & Learning Info Networks (MERLIN)		C	C	C	C		✓	✓
Knowledge Enterprises		O	C	C	C	✓	✓	✓
Life Sciences	C	O	C			✓	✓	✓
Co-ordinated Services Unit		C		O	C	✓	✓	✓
Industrial Technology Centre	C	C	C	C			✓	✓
Strategy & Planning	S	S	S	S	S		✓	✓
Tech Comm & Science policy		C	C			✓	✓	✓
Research funds	C	C	O	C		✓	✓	✓
Human Resources	S	S	S	S	S	✓	✓	✓
Finance & Admin	S	S	S	S	S	✓	✓	✓

O= owns key goals
C= contributes to key goals
S= shared service support
✓= ongoing process responsibilities

Partnering and Relationships

Part of our daily challenge is to extend the team and partnering approach further into our relationships with other departments, particularly those with which we share initiatives, and also into our relationships with other institutions, agencies and organizations. We define "partnering" as *effective collaboration that seeks a shared vision and finds ways to overcome obstacles to achieving that vision.*

EST is a key enabler within the Government of Manitoba for team-based approaches to issue resolution. Our strength and challenge lies in identifying such opportunities and promoting cross-government co-ordination, as well as aligning resources to create positive change.

We must maintain productive partnerships with certain other provincial departments like Education, Citizenship & Youth, Advanced Education & Training, Intergovernmental Affairs & Trade, Industry, Economic Development & Mines, Health, Healthy Living, Conservation, Water Stewardship and others. These partnerships also extend externally to Federal and Municipal partners, research and educational institutions, industry associations and many others. A good deal of our effort needs to be directed at *relationship management* among our many stakeholders.

The following table shows where EST is partnering with other government departments, other governments, public sector, private sector and other stakeholders to achieve our goals:

EST Strategic Priority	Other stakeholders involved or partnering															
	MB Health depts and RHAs	MB Educ'n depts, schools and higher ed	Research institutions in MB	MB Conservation and Water Stewardship depts	MB Industry, Econ Dev & Mines dept	MB businesses, industry groups	MB Aboriginal & Northern Affairs	MB Family Services & Housing	MB Intergov'tal Affairs & Trade	MB Agriculture, Food & Rural Initiatives	All/other govt of MB departments	Service Manitoba	Civil Service Commission	Crowns and other agencies	Federal Govt	MB Cities, municipalities, communities
Drive implementation of Green Strategy and maximize Energy & Climate Change Opportunities for Manitobans		✓		✓		✓	✓	✓	✓	✓				✓	✓	✓
Create major opportunities for Community & Economic Development, through 'new economy' industries and technology (including broadband)	✓	✓	✓		✓	✓	✓		✓	✓				✓	✓	✓
Significantly improve Manitoba's scientific Research Capacity and the environment for our researchers	✓	✓	✓							✓					✓	
Drive and Support Service Transformation in Government											✓	✓	✓		✓	✓
Find the top opportunities to lever and expand Government's ICT assets as strategically as possible, to benefit Manitobans	✓	✓	✓			✓					✓	✓		✓	✓	✓

How do we approach planning & monitoring?

We have developed and continually communicate a shared vision, mission and set of values. In addition, we communicate the top priority areas of focus for the department. Although these areas of focus will change over time, they should change less often than the broader vision and mission. All such statements need to be routinely re-examined.

We track the progress of our projects and other activities against key priorities, which are described in this document.

We design our planning work not only to clarify direction, but also to create internal understanding and alignment of resources. The department's executive management team created the vision, mission, values and priorities statements as a team over a series of workshops, and in consultation with members of their own units. We also used focus group input from a cross section of department employees, to further develop these statements.

We provide information to all employees about our intentions and progress, and we expect leaders to communicate with their own units regularly about our plans and the progress against them. We continually seek planning tools and processes that allow for maximum information sharing, a broad overview, and the ability to clarify ownership and responsibility for action.

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What capacities do we need in the department to be able to work this way?

At EST, we have identified three guiding themes in our capacity building efforts: These make up our Renewal Strategy:

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★**Leadership Capacity**★
★**Change Resilience** ★
★**Benefiting from Diversity**★

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The following outlines the goals and activities for our Renewal Strategy:

LEADERSHIP CAPACITY:

Goals
- Our leaders display the behaviours identified under our statement "Expectations of our Leaders"
- All employees understand the strategies and priorities of Energy, Science and Technology and how they fit in to delivering on them.
- We have leadership capacity throughout Energy, Science and Technology.
- A cyclical employee performance and development process is launched and its effectiveness is regularly assessed.
- Our employee performance and development process includes explicit people management performance targets for those managing people.

Activities
- Effective and continuous communication of EST's targets by all levels of management to employees (requires a communication plan and commitment to effective execution)
- Entrenched, ongoing leadership development programming, targeted to different levels of people managers (currently under development through Renewal Team)
- Development and implementation of a cyclical performance and development process that includes people management targets and expectations

CHANGE RESILIENCE

Goal

- We model the capacity to lead positive change.

Activities

- Change management concepts; training and development; best practices for introducing/ evaluating change
- Plan to ensure general understanding of effective project management concepts and practices
- Continuous learning and sharing regarding impacts of change and lessons learned

BENEFITING FROM DIVERSITY

We seek to recognize and effectively benefit from individuals' distinct and personal characteristics and perspectives, including age, language, culture, ethnicity, skills, gender, abilities, talents, previous experiences and perspectives. Diversity speaks to enriching the environment by facilitating the exchange of different perspectives, as an alternative to building a 'just like me' environment in an organization. (The concept of 'Employment Equity' is a subset of Diversity and refers to specific employment targets.)

Goals

- We effectively use our inter-relationships and the differences in our perspectives and experience to accomplish our work.
- The culture of Energy, Science and Technology encourages and supports diversity.

Activities

- Assess ourselves and our environment
- Educate and raise awareness about diversity

Context: *The Civil Service Renewal Strategy*:

The provincial government is now undertaking self-analysis regarding our people capacity, driven by the need to address impending demographic changes in the civil service. This effort is called the Civil Service Renewal Strategy. (See appendix A for more information and links.) Within Energy, Science & Technology, our response to the Renewal Strategy is focussed on developing those three key capacities that we need to operate in a partnering world, using a matrix management style.

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GOALS, STRATEGIES and ACTION AREAS:

EST ensures a focus on traditional *hydro-electric power opportunities*; the potential for significant power sales to other jurisdictions like Ontario is one of the most incredible economic development opportunities that has been available to the province of Manitoba in recent years. It could result in major legacy benefits to Northern communities in the areas of skills development, ongoing employment and positive local economic impact.

Consumption is another focus at EST: we seek to create opportunities to change provincial consumption behaviour around energy, water and waste generation, so that we can meet sustainable development targets and reduce our citizens' dependency on expensive, imported non-renewable resources such as natural gas.

Priority:
Drive implementation of the Green Strategy and maximize Energy & Climate Change Opportunities for Manitobans

Green Strategy, Energy, Climate Change Goals (end results):

- *Green Strategy goals implemented*, through actions within each of the relevant departments.
- *A clear understanding* within the Manitoba Government of the Green Strategy elements, their relationships with community development, the desired outcomes and which departments are responsible for each activity.
- *Maximum benefit for Manitobans* over the long term, from development and sale of Manitoba's clean power potential.
- *Manitoba as a national leader* in the development and commercialization of new renewable energy technologies.
- *Aggressive targets met for reduced energy usage* (residential, commercial and industrial)
- *The first jurisdiction in North America to achieve net zero greenhouse gas emissions*.

Strategies:

a) Facilitate negotiations with out-of-province power customers on **the export of Manitoba power** in a way that provides maximum benefit for the Manitoba people, our economy and our emission credit position.

Action areas:

- Manitoba/ Ontario power sale study – with Ontario Energy.
- Community participation and benefits from Wuskatim and Conawapa development projects. Associated offset and provincial content agreements.

GOALS, STRATEGIES and ACTION AREAS:

Manitoba's *Climate Change Action Plan* outlines our goals for reduction of greenhouse gases and doing our part to meet our Kyoto targets. While doing this, we are also committed to forging partnerships and creating opportunities for economic development in the areas of new energy technologies and environmental industries.

New energy technologies and opportunities include: wind power, ethanol, biofuels, geothermal heat pumps and hydrogen.

b) **Integrate and co-ordinate government's Green activities** across various departments, to ensure we are effective in meeting government's Green Strategy goals.

Action areas:

- Internal government understanding of Green Strategy
- Results tracking and communication
- Opportunities to improve process to deliver more/ better results

c) Create an environment conducive to the **development of renewable energy technologies** (including wind farm development and wind power purchase agreements, ethanol, hydrogen and bio-diesel mandates), by facilitating energy related agreements, legislation, investment environment and infrastructure.

Action areas:

To create strategy:
- Hydrogen industry capacity
- Ethanol infrastructure (plants),
- Bio-Diesel capacity

To create regulatory/policy infrastructure:
- Biofuels Act regulations.
- Hydro Act redrafting
- Provincial Wind Policy

To attract investment:
- Renewable-energy-related investment fund.
- Guide/broker individual investment projects relating to alternative energy

To encourage individual projects and startups:
- Manitoba/Iceland MOU (Memorandum of Understanding) initiatives
- Numerous projects and studies related to specific energy technologies (see Appendix B for list of examples)

To partner on common interests:
- Powering the Plains Renewable Energy Work Group and related Upper Midwest Hydrogen Initiative

GOALS, STRATEGIES and ACTION AREAS:

d) Lead coordinated development and action on the **provincial implementation of Canada's Kyoto Protocol plan,** by implementing Manitoba's **Climate Change Action Plan,** Create an environment that drives energy technology development and appropriate usage behaviours (domestic, industrial, commercial) sufficiently to allow us to achieve our zero emissions targets.

Action areas:

- Energy Green Print (Manitoba's renewable energy plan)
- Establish *Efficiency Manitoba*
- Building codes and standards that support the Climate Change Action Plan
- Manitoba Climate Change Action Fund (a part of the Sustainable Development Fund).
- Climate Change Bilateral Agreement.
- Manitoba's Climate Change Plan – periodic report cards
- Heat pump program
- Climate Change impacts meetings with stakeholders to determine issues and priorities. Further our ability to seek carbon credits associated with agriculture and forest industries
- New energy efficiency tools.

e) Ensure **Manitoba's interests** (economic and emissions targets and a potential carbon trading system) are represented in Federal Kyoto negotiations. Maximize our potential emissions credit position and prepare for the future.

Action areas:

- Ensure that clean energy transfer (a major Manitoba focus) qualifies for emissions credits.
- Collaborate with Manitoba's large emitters to advocate for their interests in implementation of Federal greenhouse gas emission reduction agreement related to Kyoto.

GOALS, STRATEGIES and ACTION AREAS:

Our *Innovation Framework* recognizes that scientific, social, business and financial innovation is a key to future prosperity in the province.

The mission of EST is to build the capacity for Manitobans to prosper through innovation, partly by engaging numerous stakeholders.

For this to happen, people need to be connected. The *Connecting Manitobans* Broadband strategy is our blueprint for ensuring that people and communities are connected at an acceptable level of service, and that space is available for on-line public sector service delivery as well as for community use.

EST also acts to promote some industries that are key to the innovation capacity, knowledge and skills development of future Manitobans. These include Life Sciences, (including Biotechnology) Information & Communication Technology (ICT), Digital Media and other Knowledge Enterprises, many of them medical in focus, that are forming at the intersection of these disciplines.

Priority:
Create major opportunities for Community & Economic Development, through 'new economy' industries and technology

Community & Economic Development Goals (end results):

▪ ***Maximum benefit from new industries and technologies for Manitoba's people, communities and businesses,*** *in such areas as* learning and skills development, wellness and health care, community development and empowerment, employment, business opportunities, access to government, and the ability to participate fully as citizens.

For details on Action areas, please see Appendix B.

Strategies:

a) Help Manitobans **maximize opportunities from connectivity** by: expanding the number of communities with access to networks, increasing bandwidth, increasing the number of computers available to communities and enhancing the development of local content.

Action areas:

▪ *Connecting Manitobans* Broadband Strategy
   (1) expand the Provincial Data Network to become a Public Sector Data Network
   (2) Community Innovations Fund to help communities drive connectivity themselves, and
   (3) work with CRTC (Canadian Radio and Telecommunications Commission) to redefine 'minimum service' to communities – now defined as plain telephone service
▪ Community-owned telcos north of 53°, eg. Tataskeweyak Cree Nation Telecom Corp
▪ Unused MB Hydro bandwidth for northern communities.

COMMUNITY & ECONOMIC DEV'T

GOALS, STRATEGIES and ACTION AREAS:

Related targets from the
Innovation Framework

- Ensure access to broadband or high speed networks for all communities by 2010.
- Increase the number of biotechnology companies by 50 per cent (from 20001/02) by 2007.
- Increase the number of new media and information/communication technology companies by 25 per cent (from 2001/02) by 2007.
- Create a Centre of Excellence on Composite Materials in Winnipeg by 2007.
- Establish two new business incubation facilities by 2005
- Create one spin-off company for every $10 million spent on research and development.
- Double provincial research investments (from 2001/02) by 2010

Action areas (cont'd):

- Build on satellite-based telehealth connectivity to expand to host community.
- Expand Community Connections program
- Cyberschools Manitoba Portal
- School Connectivity through PDN
- Mapping Provincial connectivity progress

b) **Assist businesses in EST's target sectors** with activities such as business expansion plans, strategic partnerships, access to programs and advice.

Action areas:

Convergence:
- Genomics, Proteomics and Bioinformatics strategic development plan to explore opportunities for convergence (i.e. Life Sciences with Information Technology, Biotechnology with medical devices)
- Telehealth collaborative research/pilot projects

Life Sciences/ Environmental Industries
- Life Sciences industry human resources strategy
- Policy on common drug review (with Health)
- Strategic Plan for Environmental Industries sector

ICT/ Digital Media Industries
- ICTAM-led ICT Sector Development Strategy (ICT Association of Manitoba, recently established with our support)
- ICT and Digital Media HR Assessment studies
- Directory and metrics re current ICT and research organizations in MB
- Directory of leading ICT companies in Manitoba
- Increased provincial Aboriginal participation in ICT and New Media sectors.
- Electronic Gaming potential for Digital Media sector
- ICT Vendor Capability enhancement
- ICT Trade Mission potential

General
- Assistance to SMEs (Small and Medium sized enterprises) through TCP (Tech Commercialization Program), FSP and Interactive Digital Media Fund

GOALS, STRATEGIES and ACTION AREAS:

c) Facilitate development and growth of **industry associations**, including: Provincial Life Science Industry Association, new ICT Industry Association, and Manitoba Environmental Industry Association.

   Action areas:

   - New ICT Industry Association for Manitoba (ICTAM), now established as formal Ministerial ICT advisory body
   - New Provincial Life Sciences Industry Association
   - Partnership between ICTAM and Software Human Resources Council

d) Attract and retain **industrial investment in Manitoba using *high quality energy* and *price stability*** as distinguishing incentives.

   Action areas:

   - Energy-related programs to benefit Manitoba companies

e) Maximize **community spin-off opportunities related to new renewable energy** developments (wind, ethanol, hydrogen and bio-diesel), such as materials manufacturing, construction, operations, haulage and related skills development.

   Action areas:

   - Variety of research, development and feasibility activities (see Energy & Climate Change Opportunities)
   - C-4 Climate Change Community Challenge – help communities with energy efficiency programs

f) Facilitate early development and assessment of **critical infrastructure centres** and **infrastructure networks**:

GOALS, STRATEGIES and ACTION AREAS:

Action areas:

- International Centre for Infectious Diseases (ICID) and related Bio-Med Corridor activities
- Richardson Centre for Functional Foods and Nutraceuticals at the University of Manitoba's SMART Park.
- Commercialization of BioMedical Technology Centre at the National Research Council.
- U of M Scanning Probe and Nano-fabrication Lab:
- TRNet
- IH Asper Research Centre
- Digital Media Development Centre
- Virtual Reality Centre
- Composites R&D & prototype Facility
- Assessment of Incubat

g) Continually **facilitate appropriate partnerships** among government and non-government stakeholders to seek maximum community value from major projects.

Action areas:

- Northern Communities and Northern Aboriginal Hydro Project
- R&D Partnership Agreement between MB and San Diego Life Sciences
- R&D Partnership Agreement between MB and State of Minnesota (Northern Great Plains Bioscience Corridor)
- Mindset and related programming
- City of Winnipeg Urban Development Agreement – innovation and community development aspects
- Federal/ Provincial/ Territorial Life Sciences Working Group
- Wellness West Steering Committee
- Canadian BioSciences Group

h) Create an **environment conducive to investment in Manitoba Knowledge businesses**, where potential investors are aware of opportunities, companies seeking funding have the required competencies to represent themselves, and an infrastructure exists to bring them together.

Action areas:

- ICT-specific investment attraction strategy
- Short Term Accelerator program – business skills for ICT and Digital Media
- Environmental Industries access to R&D incentives
- Major conferences: Bioenergy Conference, BIO International Biotech conference, Pharma Tech Summit, Americana 2005 (Environmental Industries), GLOBE 2006 (Environmental Industries)
- Deliver *The Business of Science* conference
- Deliver *The National Nutraceutical and Functional Food Conference*
- Broker current ICT investment attraction opportunities
- Bioproducts: Potential for new investment
- Customer Contact Centres

R E S E A R C H   C A P A C I T Y

GOALS, STRATEGIES and ACTION AREAS

*The **creation of knowledge through basic research*** is the genesis for many innovation activities, in the areas of natural, health and social sciences. A strong environment for institutional research also attracts and retains key people and provides a critical learning environment for new scientists in Manitoba.

A strong research environment, with close links between institutions and industry, provides a basis for the translation of knowledge into new products and processes, and allows for the benefits from commercialization to accrue to Manitobans.

EST provides the co-ordinating function for most of the research, innovation, science and technology initiatives in government.

Priority:
Significantly improve Manitoba's scientific research capacity and the environment for our researchers

Research Goals sought (end results):

- **Significantly increased provincial capacity** to perform relevant scientific research, to create and share scientific knowledge and to contribute to the commercialization stream.
- An effective and collaborative provincial **network of research institutions** that seek a common vision for research capacity in Manitoba.
- A provincial research environment that is **highly attractive** to top scientific researchers.

For details on Action areas, please see Appendix B.

Strategies:

a) **Expand our portfolio of strategic investment** in research at Manitoba institutions, focusing on support that contributes to economic and community development, retention of specialized people and their scientific knowledge and the creation of institutional capacity.

Action areas:

- MRIF (Manitoba Research & Innovation Funds)
- Expand Genomics/Proteomics capability in the province
- Pursue R&D partnership agreements between Manitoba and various jurisdictions (State of Georgia, State of Minnesota, various jurisdictions in Australia, life sciences companies in San Diego)
- Expand capacity for smaller research institutions
- Strengthen Manitoba's capacity for technical communications research

b) **Enhance research relationships and infrastructure**, and remove **roadblocks** to research capacity

GOALS, STRATEGIES and ACTION AREAS:

Action areas:

- Personal Health Information Act review committee
- Evaluation of effectiveness of research funds
- Review of fund processes and points of participation for institutions.
- Evaluate effectiveness of our research policy researcher retention in Manitoba.
- Manitoba Health Research Council strategic planning
- Manitoba Mental Health Research Foundation self-review

c) Improve **awareness** of research, science and technology in the province.

Action areas:

- Manitoba Research & Innovation Fund Communication Plan
- MindSet (Manitoba Network for Science & Technology) programming
- Government Science Activities Survey
- Manitoba ICT Research Capacity Directory

d) Seek **improved Federal-Provincial research partnering conditions** through ongoing facilitation and relationship development. Maximize added value from available federal contributions and seek aligned approach to research grants.

Action areas:

- Western Senior Officials on Innovation
- Federal, Provincial and Territorial (F/P/T) Federal, Provincial and Territorial (F/P/T) Steering Committee on Innovation

S E R V I C E T R A N S F O R M A T I O N

GOALS, STRATEGIES and ACTION AREAS:

There is a growing public demand for *new services*, delivered through new and existing channels. Public expectations include immediate, seamless access to interactive services and information through the Internet and other means.

To meet these needs, we must continually examine our processes against public needs, and be prepared to radically transform them. EST has a major part to play in the way that government as a whole uses technology and develops processes.

EST has the responsibility to work with government delivery areas to help them design, implement and maintain the business processes they require to meet their clients' needs.

Priority:
Drive and Support Service Transformation in Government

Service Transformation Goals (end results):

- **Accessible and improved service delivery** to Manitobans, through **leadership** and **focus** for the Government's service transformation activities.
- An understanding, through **modelling** and **promotion,** of the necessary **environment** for transformational process change: an environment where employees and leaders **demonstrate change resilience** and **systems thinking**, and are open and flexible to a variety of working arrangements, resource sharing and skills acquisition.

For details on Action areas, please see Appendix B.

Strategies:

a) **Leadership/focus:** Develop, assist in or consult on the **appropriate environment and capabilities** (information, tools, skills and processes) to support service transformation in Government.

Action areas:

- Manitoba Service Delivery Strategy and priority opportunities
- Implement Information Management Framework
- Access Centres with multi-channel delivery – as part of *At Your Service Manitoba*
- Service Delivery Standards – as part of *At Your Service Manitoba*
- Determine ERP (enterprise resource planning) requirements of government, including role of SAP
- Organizational and process changes recommendations (e.g. SOA for Crown Lands)
- Public consultations process review
- Regulatory Reform
- Administration & Finance Clustering

GOALS, STRATEGIES and ACTION AREAS:

b) **Modelling:** Establish EST as **a solutions-focussed integrator** for government, by developing the *leadership capacity* to demonstrate our core values, the *organizational resilience* and the *diversity* to provide transformative thinking in government.

Action areas:

- Renewal team programs to pursue skills development and organizational development (Leadership Capacity, Organizational Resilience, Benefiting from Diversity)

c) **Modeling:** Use best practice approaches for **strategy identification, planning, monitoring, communication** and associated direction of resources within the department.

Action areas:

- Cyclical planning, review and allocation process
- Planning, monitoring, management, project portfolio tools
- Employee communication of plans, expectations and results
- Change management and project management capacities.
- Skills transfer for key strategic processes.

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GOALS, STRATEGIES and ACTION AREAS

Manitoba is promoting a *"Citizens First"* service orientation that focuses on delivering provincial services through three key media (on-line, telephone and in-person channels).

This approach depends on a robust and flexible ICT environment, supported by a healthy provincial ICT sector that can deliver goods and services.

EST has the responsibility to:
- continuously evolve that environment within government so that it can support changing government programming;
- relate our environment effectively to other public sector delivery agents (such as health care and education) to maximize leverage of funds and minimize overlap;
- extend economic development opportunities to Manitoba's ICT sector as key suppliers.

Priority:

Find the top opportunities to lever and expand Government's ICT assets as strategically as possible, to benefit Manitobans

ICT Asset Goals (end results):

- **ICT assets and processes** in the provincial Government that are **robust and flexible** enough to enable innovative public sector service delivery.
- **High-functioning and responsive ICT talent and organization,** committed to providing excellent service and exhibiting superior technical, project and customer relationship skill.
- **A community of public sector ICT stakeholders** that is committed to working together towards a shared vision for service delivery to Manitobans.

Strategies:

a) **ICT Restructuring:** Transform the delivery of ICT services through shared resource approach, resulting in improved service delivery, improved cost management, improved employee development opportunities and maximizing our ability to be both proactive and responsive to government's strategic requirements.

b) **ICT Service Culture:** Establish and instill a client-focused service philosophy that is attentive and responsive to the evolving needs of the client

c) **Provincial Data Network Connectivity**: Develop and implement, in conjunction with other public sector stakeholders, a network infrastructure that services the broader public sector (including government, health and education sectors)

d) **Lever ICT Investments**: Maximize investments made in ICT by extending existing assets and services into the broader public sector. Through continual relationship building, work towards a shared-assets and shared-approach vision for ICT between the government and other public service stakeholders.

e) **Enterprise Architecture and ICT Standards:** Develop and implement enterprise architecture, a set of ICT strategic architectural principles, guidelines, directions, models and standards designed to support and improve the delivery of Government services. Establish appropriate processes for customer consultation, communication and regular evaluation of those standards.

f) **ICT Planning Capacity in business areas:** Establish an ICT planning and review capacity to support departmental program delivery, by helping programs define and plan their ICT needs. ICT resources will be prioritized and focused, ensuring there is appropriate accountability and financial control so as to support departments to achieve program and service goals.

Through continual relationship building, work towards a **shared-assets and shared-approach** vision for ICT among government departments

g) **Continual Upgrades in ICT environment**: To maintain a high functioning and lowest risk government working environment, plan for and execute a continuous cycle of upgrades to government ICT infrastructure, against appropriate standards and within available resources.

h) **Server and Application Consolidation**: Consolidate Manitoba's server and hosting environment and associated application migration, to achieve maximum cost efficiency and improve service and reliability.

i) **Enterprise ICT Service Management**: Develop and implement enterprise ICT service management processes for managing service requirements (goods and services) based on industry standard processes (such as ITIL).

Summary of key government priority statements:

1. The Manitoba government priorities that affect EST most directly include:

Manitoba Innovation Framework:

Foster an environment favourable for sustainable economic growth, job creation and quality of life for Manitobans by enhancing the innovative capacity of all participants in the economy.

1. Create skilled workforce development strategies
2. Strengthen research capacity
3. Foster an effective technology commercialization processes
4. Build innovation capacity through infrastructure development
5. Ensure a competitive innovation environment
6. Improve access to government services
http://www.gov.mb.ca/est/innovation/index.html

Manitoba's Action Strategy for Economic Growth (from PEAC)
1. Education first
2. Building through research and innovation
3. Raising and retaining investment
4. Affordable government
5. Growing through immigration
6. Building on our energy advantage
7. Building our communities

2005 update: http://www.gov.mb.ca/finance/budget05/strategy/index.html
2004 Speech from the Throne was structured according to Action Strategy for Economic Growth: http://www.gov.mb.ca/throne.html

Connecting Manitobans Broadband Strategy
*Ensure that all communities in Manitoba have access
to broadband or high speed network services by 2010.*

- Establish Community Connectivity Innovation Fund to help communities access federal funding;
- Establish a Hydro Broadband over Power Line (BPL) pilot project;
- Transform the Provincial Data Network (PDN) into the Public Sector Data Network (PSDN)
- Partner with other jurisdictions to seek CRTC regulatory reform (to redefine the minimum level of services to include broadband and cellular services)

http://gww.internal/est/broadband.html

Manitoba's Green Strategy
Manage economic growth to improve the quality of life for all Manitobans, while preserving our environment, promoting the health and well being of citizens, and enhancing our unique Manitoba lifestyle.

By:
- Designation of pristine lands and environmentally sensitive areas as protected "green zones;"
- Improved standards to protect drinking water, groundwater, and our treasured network of lakes and rivers;
- A plan to meet and exceed Manitoba's clean air Kyoto targets; and
- Expansion of our province-wide network of biking and walking trails.

http://www.gov.mb.ca/throne.html

Climate Change Action Plan
Government leading by example • Investing in knowledge • Promoting technology, development & innovation • Enhancing awareness & understanding • Encouraging action in all sectors

Manitoba's net contribution to Canada's Kyoto commitments to exceed target by 2010

- Focus on renewable electricity, through hydro generation, wind generation, energy efficiency activities. (ie: Wuskwatim Hydro Generation project expected to cut emissions by 1.1 Mt (megatonnes) per year and create up to 7,700 person years of employment)
- Selkirk Generating Station converted from coal to natural gas (cut emissions by 0.2 Mt per year)
- Blending of ethanol at 10% in all gasoline sold in the province (reduce emissions by 0.135 Mt per year, create up to 900 direct & indirect jobs in Manitoba)
- Methane capture from Manitoba landfill sites (reduces emissions by 0.4 Mt per year, create 6.7 MW of electricity).
- Industry-targeted measures cost-shared with federal government (could offer emissions reductions or credits up to 4.5 Mt per year)
- Doubling our already leading position in installation of ground source heat pumps (reduce emissions by 0.02 Mt per year if installations doubled by 2012)

… and to exceed target again by 2012
http://www.gov.mb.ca/est/climatechange/pdfs/final-mccap-sep-16-02.pdf

Central government transformation:
- *ICT Restructuring/ Transformation*
- *Finance & Admin Clustering*
- *HR competencies review*

Civil Service Renewal Strategy

1. Renewal: Make working for government a more attractive and rewarding experience for all current and potential employees.
2. Sustainability: Minimize the impact of retirements on service delivery
3. Diversity: Increase diversity at all levels of the Civil Service
4. Clarity: Increase the accountability for effective human resource management

http://www.internal/osd/policysupport/renewal.html

What is the renewal issue?

Demographic realities in Canada have had a major effect on planning in large organizations, including the civil service. Different 'generations' have different goals, values and needs from working life. In addition, they have each faced very different work challenges as they progressed through their careers. The progress of the massive cohort of 'baby boomers' through school, higher education, work and now the beginning of retirement has heralded a new focus on these matters. Now the children of baby boomers are starting to work as well.

As the older baby boomers as, well as those older than them, begin to retire, new opportunities may seem to arise for younger baby boomers and 'generation x', who have historically had to wait their turn for a seat on the employment 'bus'. Financial realities, however, mean that organizations are undertaking to control replacement of retirees. So the number of 'seats on the bus' is also decreasing.

At the same time, there has been a historical gap in the hiring of younger boomers and 'generation x' into the civil service because of economic difficulties in their early employment years. As a result there is already a limited number of this generation in the civil service. From the outside, perceived conditions may mean this generation lacks interest in entering the civil service at mid career.

To add to this mix, the civil service is hiring a new generation of young 'generation y' graduates, with particularly strong expectations for self development, meaningful work and flexibility. How will they be deployed, developed and retained?

Squeezed from both ends, government now needs a renewal strategy to consider carefully what its people development, retention and attraction needs will be. Each department has different demographic issues and different requirements.

The demographics of EST do not predict very many imminent retirements. This makes us relatively unusual among Manitoba government departments right now. There are, however, still challenges we must take up to ensure that we remain an attractive place to work.

EST's focus for renewal is on: Leadership Capacity, Change Resilience and Benefiting from Diversity.

Baby Boomers: born *about* 1945-1960
'Generation X' (sometimes called Nexus): born *about* 1961-1971
'Generation Y' (sometimes called NetGen): born *about* 1972-1990
Note: These dates are intended to be illustrative only. Various theorists use different dates to discuss generational issues. These approximate dates have been used in presentations by Dr. Linda Duxbury PHD, Professor, Carlton University School of Business, a leading researcher in the area of generational workplace issues.

The following are not initiatives, but rather APPROACHES, PRINCIPLES or METHODS that we need to consider as we plan for specific outcomes.

Community Economic Development Goals

1. Building greater community capacity
2. Nurturing individual and community pride, self-reliance and leadership
3. Enhancing knowledge and skills
4. Developing businesses that are responsive to social, economic and environmental needs
5. Fostering balanced equitable and sustainable economic development.

http://gww.internal/cedinitiative/

Sustainable Development Principles

1. Integration of environmental & economic decisions
2. Stewardship (of economy, environment, human health & social well-being)
3. Shared responsibility & understanding (of differing views, needs, regions, ethnic groups)
4. Prevention (of significant adverse effects of decisions)
5. Conservation & enhancement
6. Rehabilitation & reclamation
7. Global responsibility

Sustainable Development Guidelines

1. Efficient use of resources
2. Public participation
3. Access to information
4. Integrated decision-making & planning
5. Waste minimization & substitution
6. Research & innovation

Sustainable Development Financial Management Guidelines

Departments will:

1. Include a sustainable development impact analysis with all financial proposals, especially addressing:

- *Climate change*
- *Human health*
- *Water mgmt*
- *Child well-being*
- *Sustainable communities*

2. Strengthen accountability & responsibility for fiscal decisions
3. Create financial/policy decision processes that reflect sustainable development principles
4. Provide information on fiscal and human implications of all policies and activities
5. Establish an integrated long term budget and planning process
6. Monitor and report against the value of Manitoba's natural resources & environment

http://www.gov.mb.ca/conservation/susresmb/principles-susdev/index.html

2. Other government priorities that EST is key in supporting include:

Healthy Child Manitoba:

The best possible outcomes for all of Manitoba's children.

To their fullest potential, Manitoba's children will be:
 physically and emotionally healthy
 safe and secure
 successful at learning
 socially engaged and responsible

Guiding principles:
*Community based • Inclusive • Comprehensive • Integrated
Accessible • Quality assurance • Public accountability*
http://www.gov.mb.ca/healthychild/

Advancing Age: Promoting Older Manitobans

To create an environment that promotes health, independence and well-being for all Manitoba seniors.

Theme areas:
 Health Care: including community services, aging-in-place, care, chronic disease, addictions, geriatric training for medical workers
 Community Living: including Housing, Healthy Aging/Wellness, Caregiving, Technology & Lifelong Learning, Transportation
 Security: including Economic Status, Elder Abuse, Age Discrimination, Safety

Key principles
Dignity • Independence • Participation • Fairness • Security
http://www.gov.mb.ca/sd/advancingage.html

Full Citizenship: A Manitoba Strategy on Disability

"Persons with disabilities participate as full citizens in all aspects of Canadian society. The full participation of persons with disabilities requires the commitment of all segments of society. The realization of the vision will allow persons with disabilities to maximize their independence and enhance their well-being through access to required supports and the elimination of barriers that prevent their full participation."
Based on 1998 National strategy: *In Unison: A Canadian Approach to Disability Issues*

Areas of focus:
- Income Supports
- Access to Government:
- Aboriginal People with Disabilities:
- Disability Supports;
- Employment

http://www.gov.mb.ca/access

The Northern Development Strategy

Opportunities to develop the human and natural resources in the North -- changes which will benefit the people of the region.

The NDS identifies the following priority areas:
Housing - partnerships to improve housing
Health - improved health services and information
Transportation - improved roads and airports
Employment and Training - improved opportunities for education and
    training
Economic Development - public and private partnerships

http://www.gov.mb.ca/ana/nds.html

Neighbourhoods Alive! (Winnipeg, Brandon & Thompson)

Providing community organizations in designated neighbourhoods with the support they need to rebuild these neighbourhoods. Neighbourhoods Alive! recognizes that often the best ideas for neighbourhood revitalization come from the community itself.

NA! supports and encourages community-driven revitalization efforts in designated neighbourhoods in these key areas:
- housing and physical improvements;
- employment and training;
- education and recreation; and
- safety and crime prevention

http://www.gov.mb.ca/ia/programs/neighbourhoods/

Aboriginal Education & Training Framework

Vision: The full participation of Aboriginal people (First Nation, Métis and Inuit) in society
Mission: Total inclusion of Aboriginal education and training in all departmental activities

Primary Goals of Framework
- Improved student success and completion rates
- Increased skill training and rates of employment
- Strengthening partnerships

http://www.edu.gov.mb.ca/abedu/

Manitoba Aboriginal Education Action Plan 2004-2007

- High School -- increased graduation rates – appropriate conditions

Improve the system (curriculum, new expected outcomes, teacher training, advisory capacity) • Increase parent & community Involvement • Increase the number of Aboriginal teachers

- Post-Secondary Ed – Access & completion – *on-line access, connectivity, co-ordination, partnerships*

University College of the North • Increase financial support for Aboriginal students • Long term research regarding increased Aboriginal education participation

- Labour Market -- successful entry and participation – *appropriate conditions*

Hydro Northern Training Strategy (link to University College of the North) • Aboriginal Apprenticeship Program

- Research base– *obtain adequate information on Aboriginal education/ employment*

Baseline information (re Aboriginal teachers, student success) • Partnerships with universities & research institutions • Annual research forum • Aboriginal data in school division annual outcomes reports

http://www.edu.gov.mb.ca/abedu/action_plan/

Destination 2010: A Strategic Roadmap for
Agriculture, Food and Rural Initiatives
Creating a supportive environment that advances the greater prosperity and
stability of our family farms, our agriculture and food partners, and rural
communities.

Strategic Routes

- Farm Profitability – by attention to producers' competitive knowledge, skills and risk management capability;
- Sustainability – preserving and enhancing the province's natural resources to ensure long-term well being of farm families and rural communities;
- Food Safety and Quality – effective communication;
- Diversification and Value Added Activities – to enhance economic prosperity;
- Market Development – market trends and emerging opportunities;
- Agricultural Awareness – by Manitobans of agriculture's contributions and opportunities

http://www.gov.mb.ca/agriculture/news/2010/index.html

Manitoba's Water Strategy
*To develop watershed-based planning across the entire province to ensure that future
management of specific water issues is done carefully. A sustainable approach will
ensure that all our needs are met, while maintaining ecosystem protection.*

Six focus areas:

- *Water Quality policies*, maintaining water quality standards through programs and projects based on sustainability principles. Also co-operative pollution control programs.
- *Conservation policies,* achieved through regulations, incentives, education and watershed-based integrated resource management (seeks to retain important water flows while reducing erosion and deposition).
- *Use & Allocation policies* to address responsibility for the management of water resources, including legislation. Includes management of inter-basin transfers.
- *Water Supply policies* that focus on managing water demands, while also considering the impact of development on other uses and the environment. Also address fair distribution of costs of infrastructure, protection of potable water supplies and availability of water during extreme fluctuations in base supplies.
- *Flooding policies* designed to reduce damages and human suffering caused by flooding, through control of development, measures to reduce flood damage and decrease flood vulnerability in specific areas.
- *Drainage policies* that present maintenance of drainage as a higher priority than reconstruction, which in turn is a higher priority than new construction. Seek to undertake drainage on a watershed basis.

Implementation framework:

- Management on a watershed basis
- New water legislation
- Improved financial foundations (methods of financing water management and planning)

http://www.gov.mb.ca/waterstewardship/waterstrategy/index.html

brandmanitoba
(a project of PEAC's Image Task Force)
*We are creating a fresh, new way of communicating the province's unique
identity, to raise our profile and tell the world what a great place Manitoba is to
live in, work in, invest in and visit.*

- Strong and relevant brand, meaningful and persuasive
- Allows Manitoba to compete effectively with other destinations
- Instills our citizens with greater pride
- Consistent, effective communication
- Embraced and used by government, stakeholders, citizens

http://www.brandmanitoba.ca/

Beyond our Borders
The framework for Manitoba's International Activities
*Vision: Manitoba will be recognized internationally as
a competitive economic centre, a lucrative destination for investment,
an attractive location for immigration and international study, and
a caring member of the global community*

Objectives still in draft

APPENDIX B

Summary of Key EST Priorities, Strategies to achieve and actions to get there for 2005-6

Priority:

Drive implementation of the Green Strategy and maximize Energy & Climate Change Opportunities for Manitobans

Green Strategy, Energy & Climate Change Goals (end results):

▦ *Green Strategy goals implemented,* through actions within each of the relevant departments.

▦ *A clear understanding* within the Manitoba Government of the Green Strategy elements, their relationships with community development, the desired outcomes and which departments are responsible for each activity.

▦ *Maximum benefit for Manitobans* over the long term *from development and sale* of Manitoba's hydro-electric power potential.

▦ *Manitoba as a national leader* in the development and commercialization of new renewable energy technologies.

▦ *Aggressive targets met for reduced energy usage* (residential, commercial and industrial)

▦ *The first jurisdiction in North America to achieve net zero greenhouse gas emissions*

Strategy	*Action areas:*	*Lead*
Facilitate negotiations with out-of-province power customers on **the export of Manitoba power** in a way that provides maximum benefit for the Manitoba people, our economy and our emission credit position	Manitoba/ Ontario power sale study -- co-managed with Ontario Energy.	Energy & Climate Change Initiatives (ECCI)
	Optimize community participation and benefits from Wuskatim and Conawapa development projects, through development of appropriate policies and programs. Negotiate offset and provincial content agreements associated with new hydro electric developments.	ECCI
Integrate and **co-ordinate** government's Green activities across various departments, to ensure we are effective in meeting Green Strategy goals.	Ensure internal government understanding of Green Strategy and relative responsibilities.	Tbd
	Track actual results against plans and communicate appropriately.	Tbd
	Find key opportunities to improve planning, delivery and value of Green	tbd

Strategy	Action areas:	Lead
	activities; drive required changes in process to ensure opportunities are met	
Create an environment conducive to the **development of renewable energy technologies** (including wind farm development and wind power purchase agreements, ethanol, hydrogen and bio-diesel mandates), by facilitating energy related agreements, legislation, investment environment and infrastructure.	**Create strategy:** for development of: Hydrogen industry capacity, Ethanol infrastructure (plants), Bio-Diesel capacity.	ECCI
	Create infrastructure: • Draft Biofuels Act regulations, in consultation with industry • Participate in redrafting the Hydro Act to better reflect current imperatives. • Develop a Provincial Wind Policy, to optimize uptake of wind power generation in the province and the related benefits. Also to stimulate development of related industry such as a blade manufacturing capability to supply other jurisdictions	ECCI
	Attract investment: • Develop a renewable-energy-related investment fund. • Work to attract individual organizations as investors in alternative energy projects and businesses in Manitoba	ECCI
	Encourage individual projects and startups: Undertake initiatives planned under the Manitoba/Iceland MOU. Iceland has a major interest in renewable energies and associated best practices. It is a world leader in development of hydrogen power.	ECCI
	Encourage individual projects and startups Undertake a variety of projects and studies related to specific energy technologies: ▪ Complete evaluation of wind monitoring program ▪ Complete a research and development program into Ethanol co-products	ECCI

Strategy	Action areas:	Lead
	- Complete a preliminary evaluation of the viability of bio-diesel fuel. - Participate in micro-hydro pre-feasibility assessment teams. - Undertake a fuel cell transit bus demonstration projects. - Implement a stationary fuel cell demonstration, using bioproduct hydrogen. - Participate in installation of on-site hydrogen production system at Manitoba Hydro's Dorsey Converter Station. - Complete a feasibility study for establishing a Research/Scientific Centre of Excellence for hydrogen development in Manitoba	
	Partnering on common interests: Powering the Plains Renewable Energy Work Group and related Upper Midwest Hydrogen Initiative	ECCI
By implementing Manitoba's **Climate Change Action Plan,** lead coordinated development and action on the **provincial implementation of Canada's Kyoto Protocol plan.** Create an environment that drives energy technology development and appropriate usage behaviours (domestic, industrial, commercial) sufficiently to allow us to achieve our zero emissions targets.	Draft an *Energy Green Print* laying out Manitoba's renewable energy plan	ECCI
	Establish Efficiency Manitoba as an agency of government, supporting energy and water conservation, product stewardship and waste reduction processes, and other sustainable development initiatives, through integrated electricity/gas/water/waste management programs.	ECCI
	Develop building codes and standards that support the Climate Change Action Plan by driving usage behaviours and associated technology.	ECCI
	Undertake numerous community-driven Climate Change projects through the Manitoba Climate Change Action Fund (a part of the Sustainable Development Fund).	ECCI
	Seek federal program cost sharing though Climate Change Bilateral Agreement.	ECCI
	Periodically complete an update/ report card on Manitoba's Climate Change Plan.	ECCI
	Develop aggressive program to greatly expand number of heat pumps installed in Manitoba – the province is already benefits from being the largest per capita user of this technology, with one third of all Canadian installations.	ECCI

Strategy	Action areas:	Lead
	Conduct Climate Change impacts meetings with stakeholders to determine issues and priorities (scientific research, health, transportation, agriculture, impacts and adaptation, water, northern issues and education). Develop a recognition of the major potential contribution of our agriculture and forestry industries as sources of carbon sequestration -- and our ability to seek associated carbon credits.	ECCI
	Complete an evaluation and develop a plan for new energy efficiency tools.	ECCI
Ensure **Manitoba's interests** (economic and emissions targets and a potential carbon trading system) are represented in Federal Kyoto negotiations. Maximize our potential emissions credit position and prepare for the future	Ensure that clean energy transfer (a major Manitoba focus) qualifies for emissions credits.	ECCI
	Collaborate with Manitoba's large emitters to advocate for their interest in implementation of Federal greenhouse gas emission reduction agreement related to Kyoto.	ECCI

*Priority***:**

Create major opportunities for Community & Economic Development, through 'new economy' industries and technology

Community & Economic Development Goals (end results):

Maximum benefit from new industries and technologies for Manitoba's people, communities and businesses, in such areas as learning and skills development, wellness and health care, community development and empowerment, employment, business opportunities, access to government, and the ability to participate fully as citizens.

Strategy	*Action areas:*	*Lead*
Help Manitobans **maximize opportunities from connectivity** by: expanding the number of communities with access to networks, increasing bandwidth, increasing the number of computers available to communities and enhancing the development of local content	Connecting Manitobans Broadband Strategy implementation through: (1) expanding the Provincial Data Network to become a Public Sector Data Network through a multi-stakeholder process (2) seeking to establish a Community Innovations Fund to help communities drive connectivity themselves through federal BRAND funding (Broadband for Rural and Northern Development), and (3) seeking policy change at CRTC to redefine 'minimum service'.	Manitoba Information & Communications Technologies (MICT) (1) Broadband (2 and 3)
	Work with communities north of 53° to establish community-owned telcos. Example: Tataskeweyak Cree Nation Telecom Corp now under development. Will be first Aboriginal-owned full service telecom in the province.	Broadband
	Work with MB Hydro to offer unused bandwidth to communities or local businesses in the north.	Broadband
	Encourage users of satellite-based telehealth connectivity to expand to host community.	Broadband
	Expand Community Connections program (more hardware in communities, more community content) through new Industry Canada contribution.	Community Connections
	Cyberschools Manitoba Portal – provided Manitoba Kindergarten to	Manitoba

Strategy	Action areas:	Lead
	Senior 4 students with secure email, calendaring, file storage and web page, as well as secure infra to support school division applications.	Education Research & Communication Networks (MERLIN)
	School Connectivity through PDN – provides high speed internet to provincial schools through an integrated MRNet and MERLIN partnership by accessing the PDN backbone.	MERLIN
	Mapping Provincial Connectivity progress – develop dataset and interactive map showing community and school connectivity status for all of Manitoba.	MERLIN
Assist businesses in EST's target sectors with activities such as business expansion plans, strategic partnerships, access to programs and advice.	**Convergence:** • Create a strategic plan to maximize opportunities for convergence across the Genomics, Proteomics and Bioinformatics fields, including a plan to develop our Bioinformatics capacity, with U of M and other key genomics and proteomics stakeholders. Assess opportunities for economic development in such areas of convergence, including Life Sciences with Information Technology (ICT), Biotechnology with medical devices. • Potential Telehealth collaborative research/pilot projects: seek to pilot early examples that leverage the capacity of the Provincial Data Network.	Found in Knowledge Enterprises, Life Sciences and Strategy & Planning[1]
	Life Sciences/ Environmental Industries: • Develop MB Life Sciences industry human resources strategy (development, retention, attraction of workforce) • Develop policy on common drug review (with Health) • Strategic Plan for Environmental Industries sector, including Export Strategy, examination of key issues re lack of capital for R&D,	Life Sciences

Strategy	Action areas:	Lead
	directory of issues and capabilities for the sector	
	ICT/Digital Media Industries: • Assist in ICTAM-led ICT Sector Development Strategy (ICT Association of Manitoba, recently established with our support) • Conduct ICT/Digital Media Human Resources assessment studies for the MB industry. Foster a partnership between ICTAM and the Software Human Resources Council. • Develop a directory of current ICT and research organizations in MB and regular sector metrics. • Develop strategies to increase provincial aboriginal participation in ICT and New Media sectors. Work on common interests in this area with IBM. • Electronic Gaming: explore potential opportunities in this field for Manitoba's Digital Media industry and associated skills & training development. • ICT Vendor Capability enhancement: work with ICTAM (ICT Association of MB) to provide large ICT firms with a better understanding of local vendor capabilities around application development • Explore potential for ICT trade missions desired by ICTAM • Interactive Digital New Media Fund: transferring administration of this fund that supports the Digital Media sector, from Manitoba Film & Sound to Departments of IEDM & EST	Knowledge Enterprises
	General: • Provide assistance to Small/Medium sized enterprises through Tech Commercialization Program, Feasibility Study Program, Interactive Digital Media Fund	Knowledge Enterprises, Life Sciences
Facilitate development and growth of	Support development of a new ICT Industry Association for Manitoba	Knowledge Enterprises

Strategy	Action areas:	Lead
industry associations, including: Provincial Life Science Industry Association, new ICT Industry Association, and Manitoba Environmental Industry Association	(ICTAM).	
	Support development of new Provincial Life Sciences Industry Association	Life Sciences
Attract and retain **industrial investment in Manitoba using high quality energy** and **price stability** as distinguishing incentives.	Identify energy-related programs to help Manitoba companies remain viable or expand operations	Energy & Climate Change Initiatives (ECCI)
Maximize **community spin-off opportunities related to new renewable energy** developments (wind, ethanol, hydrogen and bio-diesel), such as materials manufacturing, construction, operations, haulage and related skills development.	Support a variety of research, development and feasibility activities as outlined in Energy & Climate Change targets.	ECCI
	Support communities to develop their own energy efficiency programs, through the C-4 Climate Change Community Challenge (in partnership with federal One-Tonne Challenge)	ECCI
Facilitate early development of **critical infrastructure centres** and **infrastructure networks**	Contribute to development plans for the International Centre for Infectious Diseases (ICID) and related Bio-Med Corridor activities	Life Sciences, Strategy & Planning
	Establish the Richardson Centre for Functional Foods and Nutraceuticals at the University of Manitoba's SMART Park.	Life Sciences, Strategy & Planning
	Contribute to development plans for the new Commercialization of BioMedical Technology Centre at the National Research Council.	Life Sciences, Strategy & Planning
	TRNet: Monitor TRLab progress in activating new 10 gb 'crash & burn' WAN for research purposes.	Knowledge Enterprises
	U of M Scanning Probe and Nano-fabrication Lab: work with U of M and	Knowledge Enterprises

Strategy	Action areas:	Lead
	Western Diversification to facilitate early development.	
	Continue to assist in development at other key centres or potential centres: IH Asper Research Centre, Digital Media Development Centre, Virtual Reality Centre, Composites R&D & prototype Facility	Variously at Strategy & Planning, Life Sciences, Knowledge Enterprises
Continually **facilitate appropriate partnerships** among government and non-government stakeholders to seek added community value from major projects	Facilitate community development, workforce/skills development, economic development and employment opportunities via the Northern Communities and Northern Aboriginal Hydro Project	ECCI
	R&D Partnership Agreement between MB and San Diego Life Sciences companies – formal R&D linkages and program involvement	Life Sciences
	R&D Partnership Agreement between MB and State of Minnesota (Northern Great Plains Bioscience Corridor) – formal R&D Linkages	Life Sciences
	Continue operating Mindset – programming directed to students and teachers, designed to jumpstart high school education in science and technology.	Strategy & Planning
	Provide innovation and community development input into new City of Winnipeg Urban Development Agreement.	Strategy & Planning
	Federal/ Provincial/ Territorial Life Sciences Working Group – ongoing involvement re common issues	Life Sciences
	Wellness West Steering Committee: for a nutraceutical and functional food industry in Western Canada	Life Sciences
	Canadian BioSciences Group – national Bio Sciences stakeholders	Life Sciences
Create an **environment conducive to investment in Manitoba**	Develop ICT-specific investment attraction strategy	Knowledge Enterprises

Strategy	Action areas:	Lead
	Expand Short Term Accelerator program (to assist ICT and Digital Media companies to gain business skills necessary to attract venture capital).	Knowledge Enterprises
	Increase number of Environmental Industries firms that access R&D incenti	Life Sciences
	Ensure strategic participation and profile at major conferences: Bioenergy Conference, BIO International Biotech conference, Pharma Tech Summit, Americana 2005 (Environmental Industries), GLOBE 2006 (Environmental Industries)	Life Sciences
	Stage The Business of Science (annual Manitoba conference re investment in science & technology).	Life Sciences
	Stage National Nutraceutical and Functional Food Conference	Life Sciences
	Broker current ICT investment attraction opportunities	Knowledge Enterprises
	Bioproducts: Potential for new investment and development: work with indu (Prairie Pulp & Paper Initiative, Biocomposites Initiative	Life Sciences
	Customer Contact Centres: work with communities seeking to attract new customer contact centres	Knowledge Enterprises

Priority:
Significantly improve Manitoba's scientific Research Capacity and the environment for our researchers

Research Goals (end results):

▪ **Significantly increased provincial capacity** to perform relevant scientific research, to create and share scientific knowledge and to contribute to the commercialization stream.

▪ An effective and collaborative provincial **network of research institutions** that seek a common vision for research capacity in Manitoba.

▪ A provincial research environment that is **highly attractive** to top scientific researchers.

Strategy	*Action areas:*	*Lead*
Expand our portfolio of strategic investment in research at Manitoba institutions, focusing on support that contributes to economic and community development, retention of specialized people and their scientific knowledge and the creation of institutional capacity	MRIF (Manitoba Research and Innovation Funds): ensure strategic distribut of available research funds to provincial research institutions, with a signific focus on health and agriculture research.	Strategy & planning
	Expand Genomics/Proteomics capability in the province, through core rese capacity to the sector	Strategy & planning
	Seek to expand the range of institutions with research capacity through stra investment	Strategy & planning
	Support activities and partnerships in ICT research with the goals of strengthening Manitoba's capacity for technical communications research (includes research through TR Labs, CANARIE, Red River College, St. Boniface Research Centre, Hydro).	Knowledge Enterprises
Enhance research relationships and infrastructure, and remove **roadblocks** to research capacity	Personal Health Information Act review committee: participate to ensure tha access to information is not unnecessarily hindered for population research	Life Sciences
	Conduct evaluation of effectiveness of research funds against their goals.	Strategy & planning

Strategy	Action areas:	Lead
	Conduct review of fund processes and points of participation for institutions	Strategy & planning
	Evaluate our policy on support to new researchers and effectiveness on researcher retention in Manitoba.	Strategy & planning
	Manitoba Health Research Council strategic planning: facilitate developmen strategic plan for the Council, a critical piece of infrastructure for provincial health research	Strategy & planning
	Manitoba Mental Health Research Foundation: assist Foundation in clarifyin updating mandate	Strategy & Planning
	Pursue R&D partnership agreements between Manitoba and various jurisdictions (State of Georgia, State of Minnesota, various jurisdictions in Australia, life sciences companies in San Diego)	Arises in Strategy, Life Sciences, ECCI
Improve **awareness** of research, science and technology in the province.	Manitoba Research & Innovation Fund Communication Plan – proactive strategy to showcase research in Manitoba and how the province supports	Strategy & planning
	MindSet (Manitoba Network for Science & Technology) programming – yea round Sci & Tech awareness activities	Strategy & Planning
	Government Science Activities Survey: annually determine and communica the key science activities of the Manitoba Government across all departmen Data is used extensively for policy purposes	Strategy & Planning
	Produce Manitoba ICT Research Capacity Directory	Knowledge Enterprises
Seek **improved partnering conditions** through ongoing facilitation and relationship development, Maximize added value from available federal contributions and seek aligned approach to research grants	Western Senior Officials on Innovation – ongoing involvement with partners sharing western Canada issues and opportunities	Strategy & Planning
	Ongoing Federal, Provincial and Territorial (F/P/T) Steering Committee on Innovation: senior official and Deputy Minister discussions to devise appropriate strategies to improve our F/P/T research partnerships.	Strategy & Planning

Priority:
Drive and Support Service Transformation in Government

Service Transformation Goals (end results):

▪ **Accessible and improved service delivery** to Manitobans, through **leadership** and **focus** for the Government's service transformation activities.

▪ An understanding, through **modelling** and **promotion,** of the necessary **environment** for transformational process change: an environment where employees and leaders **demonstrate change resilience** and **systems thinking**, are open and flexible to a variety of working arrangements, resource sharing and skills acquisition.

Strategy	*Action areas:*	*Lead*
Leadership/Focus: Develop, assist in or consult on the appropriate environment and capabilities (information, tools, skills & processes) to support service transformation in Government	Develop Manitoba Service Delivery Strategy and identify priority requirements (direct and indirect, internally and externally) for citizens and communities.	Co-ordinated Services Unit (CSU)
	Lead the government-wide implementation of the Information Management Framework and its priorities, to establish greater discipline and consistent approaches in the management of government information assets.	CSU
	Establish and evaluate Access Centres that include multi-channel delivery (fully integrated service centres for the public's transactions with government) – as part of *At Your Service Manitoba*.	CSU
	Establish Service Delivery Standards – as part of *At Your Service Manitoba*.	CSU
	Evaluate government's overall ERP (enterprise resource planning) requirements, including potential role of SAP, and recommend next investment steps.	CSU
	Recommend organizational and process changes where appropriate (eg. management of Crown Lands – new SOA)	CSU
	Improve process for government's public consultations and surveys with stakeholders: how we conduct them and how we make results available.	CSU

Strategy	Action areas:	Lead
	Regulatory Reform: co-ordinate Manitoba's response to federal-provincial activities in the area of regulatory reform, which impacts on the efficiency of processes by which companies can do business	Strategy & Planning
	Administration & Finance Clustering – project to integrate Admin & Finance functions among various departments. Currently EST already shares Admin & Finance function with Industry, Economic Development & Mines and with Intergovernmental Affairs & Trade.	Admin & Finance
Modelling: Establish EST as a solutions-focussed integrator for government, by developing the leadership capacity to demonstrate our core values, the organizational resilience and the diversity to provide transformative thinking in government.	**Significantly enhance EST Leadership Capacity:** • Effective and continuous communication of EST's targets by all levels of management to employees (requires a communication plan, commitment to effective execution and understanding among leaders of their responsibilities to communicate) • Entrenched, ongoing leadership development programming, targets to different levels of people managers • Development and implementation of performance and development process that includes people management targets and expectations	EST Renewal Team
	Significantly enhance EST's organizational resilience: • Change management concepts; training and development; best practices for introducing/evaluating change • Plan to endure general understanding of effective project management concepts and practices • Continuous learning and sharing regarding impacts of change and lessons learned	EST Renewal Team
	Benefit from diversity at EST: • Assess ourselves and out environment • Educate and raise awareness about diversity	EST Renewal Team
Modelling: Use best practice approaches for **strategy identification, planning,**	Develop and conduct cyclical facilitated process to set EST's strategic priorities, translate into actions and best use of resources.	Strategy & Planning
	Create a process and appropriate tools to effectively communicate,	Strategy &

Strategy	Action areas:	Lead
	collaborate and manage our portfolio of projects and our resources.	Planning
	Communicate priorities, expectations for performance and results achieved to all employees.	Strategy & Planning
	Develop change management capacities and project management capacities for use in government.	Strategy & Planning
	Plan skills transfer for key strategic processes.	Strategy & Planning

Priority:
Find the top opportunities to use and expand Government's ICT infrastructure as strategically and innovatively as possible, to benefit Manitobans

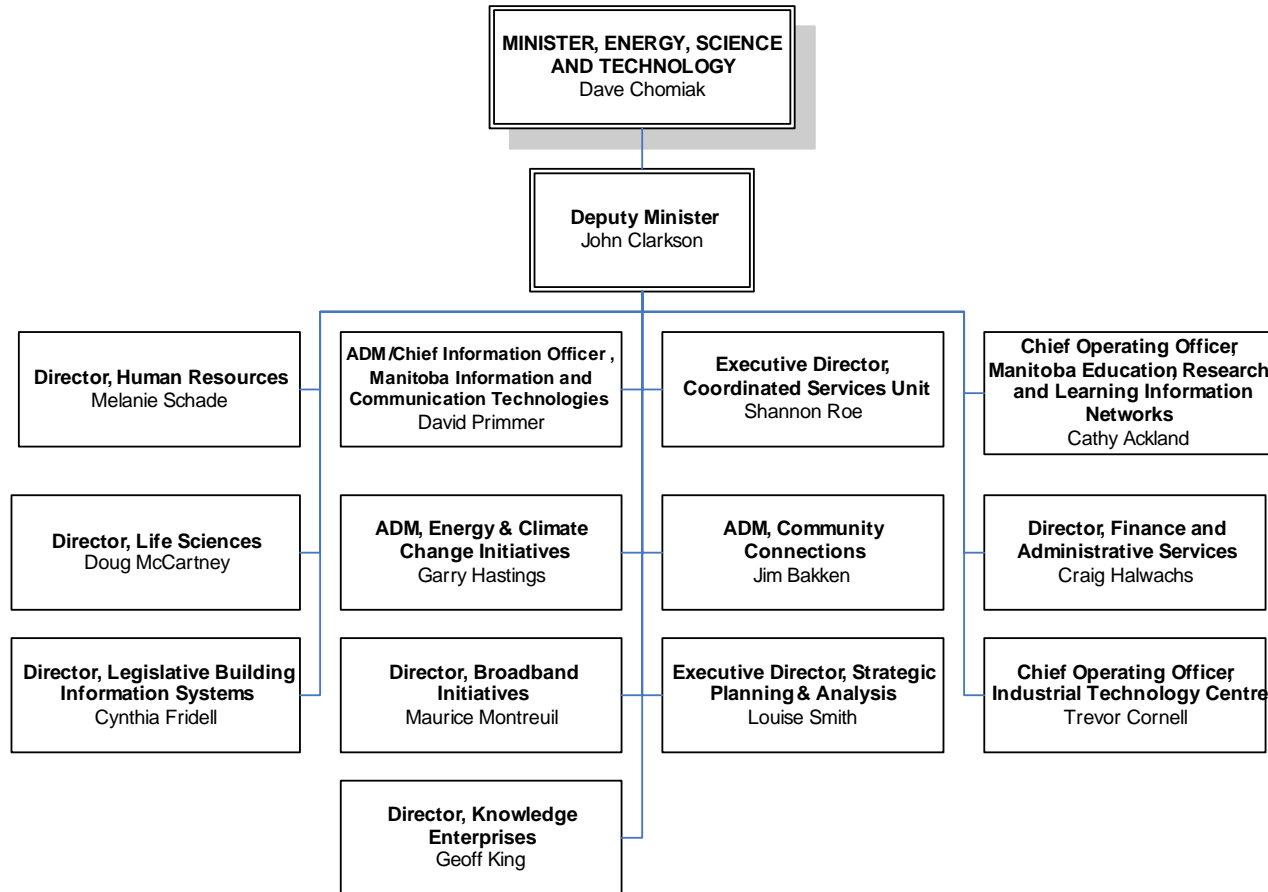**ICT Infrastructure Goals (end results):**

- **ICT infrastructure and processes** in the provincial Government that are **robust and flexible** enough to enable innovative government service delivery.

- **A high-functioning and responsive ICT organization** that is committed to providing excellent service and exhibits superior technical, project and customer relationship skill.

- **A community of public sector ICT stakeholders** that is committed to working together towards a shared vision for service delivery to Manitobans.

Strategy	*Lead*
ICT Restructuring: Transform the delivery of ICT services, through a shared resource approach, resulting in: ➢ Improved service delivery (customer satisfaction) ➢ Improved cost management ➢ Improved employee development opportunities ➢ Maximizing our ability to be both proactive and responsive to government's strategic requirements. (improved planning and delivery processes)	Manitoba Information & Communications Technologies (MICT)
ICT Service Culture: Establish and instill a client-focused service philosophy that is attentive and responsive to the evolving needs of the client.	MICT
Provincial Data Network Strategy Connectivity: Develop and implement, in conjunction with other public sector stakeholders, a network infrastructure that services the broader public sector (including government, health and education sectors)	MICT
Lever ICT Investments: Maximize investments made in ICT by extending existing assets and services into the broader public sector. Through continual relationship building, work towards a	MICT

Strategy	Lead
shared-assets and shared-approach vision for ICT between the government and other public service stakeholders	
Enterprise Architecture and ICT Standards: Develop and implement enterprise architecture, a set of ICT strategic architectural principles, guidelines, directions, models and standards designed to support and improve the delivery of Government services. Establish appropriate processes for customer consultation, communication and regular evaluation of those standards	MICT
ICT Planning Capacity in business areas: Establish an ICT planning and review capacity to support departmental program delivery, by helping programs define and plan their ICT needs. ICT resources will be prioritized and focused, ensuring there is appropriate accountability and financial control so as to support departments to achieve program and service goals.	MICT
Through continual relationship building, work towards a **shared-assets and shared-approach** vision for ICT among government departments	MICT
Continual Upgrades in ICT environment: To maintain a high functioning and lowest risk government working environment, plan for and execute a continuous cycle of **upgrades to government ICT infrastructure**, against appropriate standards and within available resources**.**	MICT
Server and Application Consolidation: Consolidate Manitoba's server and hosting environment and associated application migration, to achieve maximum cost efficiency and improve service and reliability.	MICT
Enterprise ICT Service Management: Develop and implement enterprise ICT service management processes for managing service requirements (goods and services) based on industry standard processes (such as ITIL).	MICT

A P P E N D I X C

ENERGY, SCIENCE AND TECHNOLOGY
Organization Chart

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                    MINISTER, ENERGY, SCIENCE
                         AND TECHNOLOGY
                           Dave Chomiak

                           Deputy Minister
                            John Clarkson
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Director, Human Resources Melanie Schade	**ADM/Chief Information Officer, Manitoba Information and Communication Technologies** David Primmer	**Executive Director, Coordinated Services Unit** Shannon Roe	**Chief Operating Officer, Manitoba Education Research and Learning Information Networks** Cathy Ackland
Director, Life Sciences Doug McCartney	**ADM, Energy & Climate Change Initiatives** Garry Hastings	**ADM, Community Connections** Jim Bakken	**Director, Finance and Administrative Services** Craig Halwachs
Director, Legislative Building Information Systems Cynthia Fridell	**Director, Broadband Initiatives** Maurice Montreuil	**Executive Director, Strategic Planning & Analysis** Louise Smith	**Chief Operating Officer, Industrial Technology Centre** Trevor Cornell
	Director, Knowledge Enterprises Geoff King		

Not reflected on this chart:
Manitoba Health Research Council and
Manitoba Gaming Control Commission

Effective April 2005

Membership of the Energy, Science & Technology Renewal Team:

Martin Bajt, *Manitoba Information & Communications Technologies*
Lynn Cowley, *Financial and Administrative Services*
Carolyn Gillespie, *Human Resource Services*
Suzanne Gilson, *Human Resource Services*
Ingrid Hanson, *Strategic Planning and Analysis*
Susanne Parent, *Energy and Climate Change Initiatives*
Robyn Van Vliet, *Co-ordinated Services Unit*
Christina Weise, *Strategic Planning and Analysis*
Roger Yost, *Co-ordinated Services Unit*

Chair: Shannon Roe, *Co-ordinated Services Unit*