



Climate Change Adaptation in Winnipeg Workshop

Prepared for: Manitoba Conservation

Submitted by: Sean Madden
Climate Change Coordinator

1. Introduction

The City of Winnipeg conducted a Workshop entitled “**Climate Change Adaptation in Winnipeg**” on Friday, March 25, 2011.

The one-day workshop was hosted by Ian Hall, Environmental Coordinator and facilitated by Sheldon McLeod (consultant). Technical and/or funding support was provided by Manitoba Conservation, Manitoba Health, and Natural Resources Canada through the Prairie Region Adaptation Collaboration (see Agenda – Appendix A).

Workshop participants included managers in a wide range of City departments, including hard and soft service areas and corporate functions (Appendix B).

The workshop addressed the following:

- Developing a shared understanding amongst key City managers and directors about climate change impacts facing Winnipeg now and in the future – including heat events and changes in seasonal moisture (both flooding and drought).
- Producing a preliminary list of climate change risks and vulnerabilities facing Winnipeg;
- Identifying current and future avenues for taking adaptive action;
- Identifying a plan for follow-ups and next steps

The workshop formatted included morning presentations from climate and risk management experts and reconvened for facilitated break-out sessions and roundtable discussion. The workshop agenda is attached as Appendix A.

2. Workshop Highlights

2.1. Presentations

The workshop was introduced by Mr. Deepak Joshi, Director of Property, Planning, and Development. Mr. Joshi spoke about the importance of proactive planning and current/future challenges of a changing climate

Mr. Randall Shymko (Manitoba Conservation) then provided an introduction to the Prairie Region Adaptation Collaborative and its current activities.

Speaker: Dr. Danny Blair, Acting Associate Dean of Science, Principal of the Richardson College for the Environment, The University of Manitoba

Topic: Climate Change in Manitoba: A Review of the Science, Trends and Projections

Dr. Blair shared information about the science behind climate change and impact modeling, as well as the certainty, severity and timelines associated with impacts that will influence Winnipeg in the coming century. [CLICK HERE FOR PRESENTATION](#)

Speaker: Mr. Dan Sandink, manager of Resilient Communities & Research, Institute for Catastrophic Loss Reduction (ICLR)

Topic: Homeowner Involvement in Urban Flood Reduction [CLICK HERE FOR PRESENTATION](#)

As a member of the ICLR, an insurance industry-affiliated centre focusing on interdisciplinary disaster prevention, research and communications, Mr. Sandink's presentation provided insight into the perspective of climate-related events and their consequences to homeowners, businesses and local government, using basement flooding as a case study.

Key points of the morning presentations can be summarized as:

- Even if extensive emissions reductions are made now, the effects of existing greenhouse gases in the atmosphere will continue to be felt for decades (with 33% of CO₂ in atmosphere after 100 years).
- Canada is and will continue to be significantly affected by Climate Change in the future. Warming trends of the last 50 years are roughly two times as great as warming rates of the past century.
- Although the Winnipeg region currently experiences large variability between seasons and climatic events, the anticipated increase in climate variability would produce even greater consequences, with increased likelihood of flood, drought and extreme weather.
- Based on a composite of many academic and government sources, Winnipeg has a high likelihood of seeing significant climate changes in the coming century (see summary table below).
- Climate-related events have produced the three largest Canadian insurance industry payouts, including the Quebec ice storm (1998), Ontario's extreme rainstorm (2005) and Alberta's hail and wind storm (2010) for a total of \$2.9B.
- The projected increases in precipitation and extreme weather due to climate change have the potential to increase flood and rainfall risks to industry and homeowners. Governments are publicly perceived to be responsible for reducing risk through structural adjustments (e.g. flood protection, backflow valve/sump pit assistance).
- There are strong correlations between disaster experience and prevention, underpinning the need for adaptation by governments (all

levels) and property owners (noting that, for instance, homeowner actions play an important part in overall flood mitigation strategies).

Summary: Key Climatic Projections for Southern Manitoba - Next 100 Years

Variable	Projected Change	Confidence
Annual Mean Temperature	+1 to +3°C by 2050	Very High
Winter Mean Temperature	+3 to +5°C by 2050	Very High
Warm-season heat waves	Warmer and more frequent	Very High
Heat extremes	Warmer and more frequent	Very High
Snow cover season	Much shorter	Very high
Winter rain events	Many more	Very high
Droughts	More and longer	High
Intense rain events	More and more intense	High
Year to year variability	Higher	High
Very wet winters	More frequent	High

Source: Dr. Danny Blair, March 25, 2011

2.2. Breakout Sessions

Workshop participants, internal experts in areas including water, buildings, and planning synthesized the materials shared and, through facilitated breakout sessions organized into ‘soft’ and ‘hard’ services, were asked to:

- Evaluate climate change hazards and associated risks;
- Qualitatively rank the frequency and consequence of those risks;
- List current strategies/programs/tools that are or could be used to address risks, and potential future responses.

It was noted that Winnipeg (as a city and as a region) is already actively adapting to some climate change hazards, e.g. flooding – emergency planning, backflow valve/sump pump subsidies, floodway expansion).

Workshop participants viewed winter rain as the most probable and consequential climate change risk, with impacts ranging from infrastructure and drainage impairment to potential power supply disruption as well as public safety issues expected relating to mobility and emergency response times.

Workshop participants also considered extreme heat events to have significant potential to exacerbate existing human health conditions and stress energy systems. The need to have safe and cool locations for the sick and elderly is

essential and could become a widespread challenge as demonstrated in Chicago, Toronto and across Europe in years past.

A preliminary analysis of climate change hazards, risks and potential responses developed at this workshop was compiled and will be used to frame future, issue-focused discussions).

3. Conclusions, Recommendations & Next Steps

Climate change has become a prominent environmental issue. Projections of global warming, rising ocean levels and extreme weather have been researched and communicated by academics. Continuous effort towards climate change mitigation is essential but the inevitability of changing climatic events is real. Climate change adaptation is critical to livability, resilience and to the ability to deliver infrastructure and services cost-effectively.

Addressing climate change and fostering community resilience through robust long-range planning are supported by Winnipeg's long range development plan, *OurWinnipeg*, and its supporting direction strategy, *A Sustainable Winnipeg*.

Through this event, additional internal dialogue, and utilizing the support of Natural Resources Canada and Manitoba Conservation (both actively engaged in climate change adaptation planning), the City of Winnipeg has begun an internal climate change adaptation planning process by:

- Researching existing adaptation planning frameworks and plans in other jurisdictions
- Consulting with climate change and adaptation planning experts
- Conducting internal research involving City management to assess current adaptive capacity

This planning process has, to date, focused on municipal service areas. However, current and potential future complementary activity by other governments, developers, property owners or other individuals is within the scope of the exercise. Dialogue with these groups is contemplated as a future step.

Two additional internal educational events were hosted in May of 2012 with a total attendance of approximately 100 professionals from broad sectors of the public service. Further research, analysis and dialogue are ongoing and a more comprehensive risk assessment process is being planned for the fall of 2012. With the large volume of strategic planning currently underway (e.g. Parks Plan, Urban Design Strategy, Transportation Master Plan) and subsequent updates to operational plans, there is a timing opportunity to seamlessly integrate adaptive measures and risk-mitigation measures into existing operations.

City of Winnipeg – Climate Change Adaptation in Winnipeg Workshop

Ultimately, the development of an ongoing process for proactive climate change adaptation planning that leverages opportunities for synergy is a desired outcome. Such a process has the potential to minimize costs and disruption and to maximize the value of investments in infrastructure and services.

4. Appendices

Appendix “A”

March 25, 2011 Workshop Agenda

8:45-----Coffee / Tea and Muffins

9:00-----Welcome and introductions

9:15-----Facilitator Explanation / Agenda (Sheldon)

9:30-----PRAC program explanation

9:45-----Speaker: The Science of Climate Change
(Danny Blair) / with questions

10:45-----BREAK

11:00-----Dan Sandink Presentation: Urban Flooding
and Municipal Capacity

12:00-----LUNCHTIME

12:45-----Break into “Hard” and “Soft” groups to discuss
specific departmental vulnerabilities and
conduct risk assessment exercises.
(Break included)

3:00-----Sharing of results (Plenary)

3:20-----Next Steps and Feedback

3:45-----Adjourn

Appendix “B”

March 25, 2011 Workshop Invitees and Participants

Attending:

Barry MacBride, Director, Water and Waste
Deepak Joshi, Director, Planning, Property and Development
Nelson Karpa, City Assessor
Patti Regan, Manager, Planning and Land Use Division
Georges Chartier, Manager of Infrastructure Planning
Susanne Dewey-Povoledo, Planner, Planning, Property and Development
Bill Menzies, Manager of Operations, Winnipeg Transit
Gary Holmes, Manager of Strategic Support Services, Planning, Property and Development
Michelle Richard, OurWinnipeg Coordinator, Planning, Property and Development
Garry Solkoski, Manager of Development and Inspections
Mike Shkolny, Manager of Engineering, Water and Waste
John Wintrup, Principal Planner, Planning, Property and Development
David Marsh, Planner, Planning, Property and Development
Darryl Drohomerski, Manager of Solid Waste Services
Bryan Mansky, Deputy City Auditor
Ian Hall, Environmental Coordinator, Planning, Property and Development
Dylan Harris, Policy and Project Analyst, Planning, Property and Development

Sheldon McLeod (Facilitator)
Randall Shymko (Manitoba Conservation)
Ramon Sales (Manitoba Conservation)
Toni Morris-Oswald (Manitoba Health)
Brian Horton (Natural Resources Canada)

Regrets:

Moira Geer, Chief Financial Officer
Brad Sacher, Director, Public Works
Dave Wardrop, Director, Winnipeg Transit
Clive Wightman, Director, Community Services
Keith McCaskill, Chief, Winnipeg Police Service
Randy Hull, Emergency Preparedness Coordinator
Luis Escobar, Manager of Transportation, Public Works
Roy Hartmann, Manager of Engineering, Public Works
Kathy Knudsen, Manager of Strategic and Information Systems Services, Community Services
Kim Raban, Manager of Land Development, Planning, Property and Development
Leonard Strijack, City Solicitor
Reid Douglas, Deputy Chief, Winnipeg Fire Paramedic Service
Jim McIsaac, Staff Sergeant, Winnipeg Police Service