



Prairies Regional Adaptation Collaborative (PRAC)
COMBINED WATER/DROUGHT/EXCESSIVE MOISTURE FORUM

Proceedings

Delta Hotel, Winnipeg, Manitoba September 20-21, 2011

A PARTNERSHIP OF:



Saskatchewan
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EXECUTIVE SUMMARY

The Prairies Regional Adaptation Collaborative (PRAC) held a Combined Water and Drought and Excessive Moisture (DEM) at the Delta Hotel in Winnipeg, Manitoba on September 20–21, 2011. The workshop aimed to promote increased awareness and understanding of climate change impacts to water resources, sectors and regions at risk of drought and excessive moisture, update on the current and planned activities, share successes and best practices and foster enhanced inter-provincial collaboration and partnership on PRAC water and DEM activities with the view to improving targeted outputs and outcomes. Forty-four participants representing Alberta, Manitoba, Saskatchewan, federal government agencies and non-government organizations were in attendance.

The 1.5-day forum was structured into provincial and program updates and presentations that provided the context of the workshop and breakout group discussions to allow the participants to brainstorm on and respond to a set of questions that addressed the above workshop objectives and expected deliverables of the PRAC Water and DEM theme work. Recurring themes in the breakout and plenary sessions centered on climate data, approaches and tools, adaptive strategies and best practices, communication and knowledge, collaboration and partnerships, mainstreaming, project continuity and scaling-up, funding and governance. Group outputs were then presented to plenary, and followed by observations from the participants. The final plenary revolved around four themes: collaborative mechanisms, network of networks, priority actions for the remaining six months of the project and the PRAC Final Forum. This was followed by the concluding remarks from the overall facilitator and the forum planning team lead.

INTRODUCTION

The Prairies Regional Adaptation Collaborative (PRAC) is a three-year inter-provincial project intended to enhance climate change adaptation decision making in water resources management, drought, excessive moisture and terrestrial ecosystems. A joint undertaking of Alberta, Saskatchewan, Manitoba, Natural Resources Canada and the University of Regina, PRAC has four key theme areas:

- Water resource management
- Drought and excessive moisture
- Terrestrial ecosystem management and
- Coordination, adaptation and resilience forums, integration and management.

Cross-cutting the themes, the Adaptation and Resilience Forums are designed to develop an understanding of the adaptability and resilience of socio-economic systems, build capacity, and to revise or develop policy options and recommendations for climate change adaptation related to water and terrestrial ecosystems issues. This subtask will involve three stages of facilitated forum discussions involving all participants of the Prairies RAC. The forums provide a mechanism for inter-jurisdictional discussion, joint exploration of issues, and an opportunity to advance policy options and recommendations.

In line with this, the PRAC organized a Combined Water and Drought and Excessive Moisture Forum (DEM) which was held on September 20–21, 2011 at the Delta Hotel in Winnipeg, Manitoba. The forum sought to:

- Promote increased awareness and understanding of the impacts of climate change to water resources, sectors and regions at risk of drought and excessive moisture.
- Provide updates on the PRAC Water and Drought and Excessive Moisture (DEM) theme work and planned activities;
- Identify ways to improve targeted outputs and outcomes.
- Foster enhanced inter-provincial collaboration and partnership on PRAC Water and DEM activities.
- Share successes/best practices, lessons learned, challenges, progress,
- gaps and opportunities in addressing targeted policies, and discuss potential policy options and recommendations for the Prairies RAC final forum, theme reports, and final synthesis report.

Appendix A shows the Forum agenda.

This forum brought both Water and DEM leads/supports together with the aim of improving integration of water theme outputs and recommendations into the DEM activities. The forum was attended by forty-four (44) representatives from Alberta, Manitoba and Saskatchewan, federal government agencies and non-government organizations.

Summary of Forum Proceedings

DAY 1, SEPTEMBER 20, 2011 (TUESDAY)

Mr. Sheldon McLeod, the overall workshop facilitator, opened with introductions of the participants from the three provinces, federal government agencies and non-government organizations, and then provided an overview of the objectives, agenda and timeline of the 1.5-day workshop.

Updates on Water Theme Work

Mr. Abul Kashem, P.Eng

Water Supply and Drought Engineer

Manitoba Water Stewardship (MWS)

Presentation: *Update on Assiniboine River Water Demand Study*

[CLICK HERE FOR PRESENTATION](#)

Mr. Kashem's presentation focused on the context, purpose, scope, schedule, initial results expected outcomes and current status of the Assiniboine River Water Study. He explained that this PRAC study builds on the Geniver 2008 study, which involves the review of the current water use and demand and the future sectoral water demand for the Assiniboine River with and without climate change for the periods 2010, 2020, 2050 and 2080.

Mr. Kashem highlighted the following points about this study which runs up to December 2011:

- The study provides an integrated analysis of the key socio-economic, agriculture, climate change, water allocation/use variables that underpin current and future water use and demand, with and without climate change, the results of which served as input to a visioning workshop with stakeholders.
- The medium growth rate has been selected as basis for the population projection.
- Expected outcomes include a report outlining the water demand with and without climate change and a suite of policy recommendations that will be developed by the International Institute for Sustainable Development (IISD) that will build on this research report.

Questions/clarifications after the presentation touched on the study scope and variables (i.e., key assumptions used in assessing links between economic and population growth rates and water demand, "business as usual" demand projections), and availability of climate data/information. Mr. Kashem explained that given limited funding, the study focuses on surface water shortage and not on aquifers.

Mr. Abul Kashem, P.Eng

Water Supply and Drought Engineer

Manitoba Water Stewardship

Presentation: *Update on Assiniboine River Hydrologic Modeling Study*[CLICK HERE FOR PRESENTATION](#)

On behalf of Tony Kettler, Mr. Kashem provided an update on the Assiniboine River Hydrologic Modeling Study, its purpose, scope, schedule, study variables, expected outcomes and current status. In his presentation, he stressed the following:

- The study seeks to assess the potential effects of climate change on surface water supply and soil moisture in the Assiniboine River to support adaptation strategies in the province of Manitoba.
- A water surface model has been developed using a calibrated, physically based distributed hydrologic modeling tool (MIKE-SHE) that analyzes precipitation and temperature data for 1991–2003, and uses the Canadian Regional Climate Model (CRCM) model outputs for the 1961–1990 period to develop baseline model results.
- The calibrated and verified model will be used to simulate future streamflow and soil moisture variables for the entire study area covering the periods 2011–2040, 2041–2070 and 2071–2099.
- Slated to be completed by December 2011, the study is expected to generate a report that provides a detailed description of model elements, assumptions, inputs and outputs, a summary of the hydrologic regime, conclusions on the implications for future water supply and soil moisture related to climate change scenarios vis-à-vis baseline conditions and recommendations on actions going forward.

Ms. Elaine Fox

Manager, Policy and Legislation

Manitoba Water Stewardship

Presentation: *Water Soft Paths—Toward a Community of Practice in Manitoba*[CLICK HERE FOR PRESENTATION](#)

In her presentation, Ms. Fox shared the experience of the Water Soft Path project, a joint initiative of the MWS and Friends of the Earth (FoE)-Canada that promotes an innovative approach to water conservation focusing on demand-side management and on reducing water demand through innovation, conservation, reallocation, re-use and changing use.

Ms. Fox explained the following key features of the joint project:

- The project's four key principles, objectives, process and outcomes and how this initiative complements PRAC. This MWS-FoE joint project aims to build awareness and capacity of the Pembina Valley Conservation District for water conservation planning, focusing on six Rural Municipalities and several small communities within the district.
- In the pilot's second phase, IISD has been contracted to assist with the second phase of the socio-economic pilot in order to produce the Strategic Plan for Water Conservation in Manitoba.

- For 2011/12, the project is set to hold two training workshops—one for provincial planners and another one for conservation district managers with the aim of integrating water soft paths approaches to and effective water conservation programs into municipal developmental plans and conservation district watershed management plans.

Ms. Fox noted that the lessons learned from this pilot project in Manitoba has helped FoE-Canada to improve the latter's "Guidebook for Developing Water Soft Paths in Canadian Municipalities." She concluded by highlighting that all this would lead to building a community of practice around water conservation not only in Manitoba but also in other jurisdictions across Canada.

Questions raised by the participants pertained to the availability of online training workshops, setting standards and the potential mitigative reduction as a result of water soft paths.

Dr. Dave Sauchyn and Mr. Tom Harrison

Prairie Adaptation Research Collaborative (PARC)/ University of Regina and Saskatchewan Watershed Authority (SWA)

Presentation: *Provincial Updates on Water: Alberta and Saskatchewan*

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Dr. Sauchyn discussed the current state of knowledge on the water resources of Alberta and Saskatchewan, emphasizing that various data sources have been used to examine current and future water resources in these two provinces. These data sources include the 2006 Hydrometric Network comprised of 2,100 active stations that are heavily concentrated in the southern part of the two provinces.

He noted the following points regarding current and future water resource trends:

- Water gauges for continuous natural flow stations have been retained, 500 of which have 20-year contiguous data, while another 40 with 50-year contiguous data.
- The problems that were encountered with stream flow records, including their short data cycle (i.e., from 40–50 years up to 95 years) and data gaps especially in 1930s and 1940s, and the solutions employed to trend detection problems.
- Based on 1950–2007 data collected at Waterton River, the Southern Prairies are running out of water due to global warming, which is attributed to the serious decline in precipitation and stream flow in Alberta for this period to what is happening on the Pacific Decadal Oscillation (PDO). The PDO is a major factor controlling Canadian Prairie precipitation and streamflow.
- If PDO is not taken into account (i.e. by omitting the 1930s and 1940s which represent periods of high positive PDO, hence probable low streamflow), this could yield false declines, resulting in the trend not being significant. Trend detection in instrumental data for Alberta have shown 15 declines, 7 no trends and 2 increases.
- Based on the Saskatchewan trend, PDO is not much detected, however some gauges have revealed declining flows. The PDO and ENSO have no influence as no correlation has been established in some gauges. Hence, there is a need to take PDO into account when looking at flows. The naturalized flow of the South Saskatchewan River at Medicine Hat shows a strong 60-year cycle, showing some hints of global warming.

- Recorded data from stream flows and groundwater levels have been correlated with tree rings of an 800-year old wood by the University of Regina Tree-ring Lab Network, which showed a high statistical relationship between tree growth and groundwater levels. Streamflow data on Souris River and North Saskatchewan River at Edmonton have also been reconstructed, from which PDO cycles have also been viewed.
- Since 2006, the Alberta government has stopped accepting applications for new allocations of water in the Oldman, Bow and South SK sub-basins.

Dr. Sauchyn also shared the experience of the Extreme Climate Events Preparedness and Adaptation (EXTRA) Project, which brought water resource managers together to find the best way to prepare for a drought using micro-climatic scenarios. He noted that while El Nino accounts for some variability, the PDO has shown some unclear tendency, as reflected in both positive and negative shifts in the future projections. As observed in the future hydro-climatic projections, he noted that the curve is shifting towards less water, indicating a 5% chance of the Oldman River drying up by 2050 and a 38% chance of this river drying up in 2096 if nothing is done about climate change and water use.

On the part of Saskatchewan, Mr. Harrison noted that a water availability study is now being undertaken to determine water use and water demand, of which groundwater is a big study component. Part of this study, he added, is developing a protocol on how to determine groundwater supply and yields as well as operational plans for Diefenbaker and Qu'Appelle. He stressed that Alberta is looking at demand models, crop demands, temperature increases and other variables that influence water demand.

Mr. Harrison ended his presentation by emphasizing that, comparing future to current demands, temperature increases and water demand changes to crops essentially creates more questions on how to manage climate variability. In the context of a seven-year drought and the current flooding conditions facing Peace River, dealing with water variability remains a key challenge to providing adequate rural water supply in Saskatchewan.

Questions raised by the participants included the usefulness and comparative nature of international gauge systems and the use of seasonality flow correlation.

Updates on Drought and Excessive Moisture Theme Work

Mr. Abul Kashem

Manitoba Stewardship

Presentation: *Update on Manitoba Drought Management Plan*

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The first part of Mr. Kashem's presentation focused on the context, purpose and drought definitions and type that guide Manitoba's Drought Management Plan. He explained the following in relation to Manitoba's efforts on drought management:

- Drought occurrences have been recorded over the past decades from 1930s through the present, and their potential impacts and costs associated with droughts in relation to key sectors such as agriculture, irrigation, rural and urban supply, hydropower generation, recreation, industry and aquatic resources.
- Although Manitoba has no formal drought management plan and its response is typically on *ad hoc* basis, a conceptual framework has been developed and efforts are now underway to develop a formal one.
- The purpose of the plan is to provide action strategies and a response framework for an integrated approach to minimize the environmental, social and economic impacts of drought on Manitoba's people, economy and environmental resources. This plan is designed to complement existing water resources management and emergency plans and policies.

The second part of Mr. Kashem's presentation dealt with the definition of drought and its types, proposed drought stages and indicators. He concluded his presentation by outlining the next steps to be undertaken to complete an initial draft plan through review and engagement of internal departmental decision-makers and external and stakeholders, further research on climate change and water supply and demand for major river basins in Manitoba and the development of appropriate indicators.

Mr. Randall Shymko

Climate Adaptation Project Manager

Manitoba Conservation

Presentation: *Manitoba PRAC DEM Municipal Adaptive Planning*

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Mr. Shymko discussed the importance of the Manitoba PRAC Municipal Adaptive Planning Initiative with regard to increasing the capacity of municipal decision-makers to integrate adaptation into decision-making. In his presentation, he explained the following:

- The overall approach and current adaptive measures being undertaken by PRAC partner municipalities, including the City of Winnipeg and Wesman Rural Municipalities and towns
- An on-line survey of the current vulnerabilities of municipal Manitoba was conducted in the spring of 2010 which yielded a summary of current vulnerabilities, the most critical of which are aging infrastructure such as bridges, roads and bridges, aging/declining population and recurring flooding.
- The survey results highlighted that flooding (i.e., recurring and flash floods), drought and extreme weather events are perceived by the respondents as among the current major climate risks. The increased frequency and severity of flooding, excess moisture episodes, the less certainty of seasonal weather patterns and the increasing challenges in storm water management are among the key potential future impacts.

Mr. Shymko further revealed that the three topmost current hazards are water quantity (flooding, excess moisture, drainage), infrastructure (water/sewerage system breaks, potholes, etc.) and water quality (crop failure, loss of animals, etc.). He finally outlined the next steps of the proposed risk planning process that the partner municipalities will undertake, which include risk evaluation, adaptation measures and implementation and monitoring. A workshop with these municipalities will be held in Brandon in the fall.

Dr. Tony Szumigalski

Policy Analyst

Manitoba Agriculture, Food and Rural Initiatives (MAFRI)

Presentation: *Provincial Planning on Adaptation for Excessive Moisture in the Interlake Region*[CLICK HERE FOR PRESENTATION](#)

Dr. Szumigalski discussed MAFRI's initiative on provincial adaptation planning on excessive moisture in the Interlake Region which is identified in a 2007 IISD study as the most vulnerable agricultural region to climate change. In his presentation, he noted the following key features of the study:

- Evaluation of risk mitigation options for excessive moisture on farmlands that take into account current and past preparedness, programming and response, identifying gaps and issues/constraints and a review and integration of key issues, findings and recommendations in the East Interlake Conservation District Integrated Watershed Management Plan.
- A review of drainage planning policy, business management and crop insurance program uptake and farm management practices, the assessment of impacts of future climate change for the case study area, with emphasis on soil moisture extremes and the provision of policy and programming recommendations to address any gaps and increase adaptive capacity.

Dr. Szumigalski underscored that the study outcomes will inform the development of a provincial EM strategy to reduce vulnerability and increase resilience of agriculture sector to extremes of soil moisture. The study, which is being conducted by MMM Ltd., is expected to be completed by January 2012.

Questions raised after the presentation pertained to the potential role of Manitoba Infrastructure and Transportation in the planning process and the difference between wetland and actual water accumulation.

Mr. Tom Harrison

Director, Planning and Partnerships

Saskatchewan Watershed Authority (SWA)

Presentation: *Saskatchewan PRAC Update*[CLICK HERE FOR PRESENTATION](#)

Mr. Harrison discussed SWA's current socio-economic vulnerability studies using bottom-up vulnerability assessments for two Saskatchewan watersheds—the North SK River Watershed and the Old Wives Lake Watershed. He stressed the difficulty of producers to further enhance resiliency, while maintaining production rates and lifestyle, and the important role of social networks in enhancing producer resilience.

Mr. Harrison further noted the following points:

- SWA partnered with local watershed agencies in delivering workshops to provide direction on adaptation and develop recommendations for provincial policy that would facilitate local adaptation, with particular focus on the Swift Current Watershed, Assiniboine/Yorkton Creek and the North Saskatchewan Watershed.
- Under the DEM provincial planning component, SWA's current efforts at assessing water demand in Saskatchewan's major drainage basins and developing projections for potential future demand based on various economic growth scenarios as well as water demands from all key users—the industrial (oil, gas and mining), agricultural, municipal and other sectors (wildlife and recreation) for the 2020, 2040 and 2060.
- These studies will involve potential future scenarios of climate, demographics and socio-economics.

Mr. Harrison's presentation also highlighted SK's evaluation of DEM monitoring through the use of relevant indicators and models and existing observation networks and interpolation techniques, the results of which will provide the basis for recommendations to improve monitoring. He further explained the following:

- The importance of building a network of networks and addressing key policy barriers.
- The results of the NAWMP pilot study involving IISD that assessed existing agri-environmental policies and programmes using a wetland habitat as a case study in terms of how they contribute to enhancing adaptive capacity of economic sectors.
- The synthesis report will help provide direction for mainstreaming adaptation in water use across sectors in Saskatchewan through comprehensive water conservation planning.

Mr. Harrison concluded by emphasizing that one of the challenges encountered by SWA in the water demand study is the inability of some agencies to provide relevant data and information needed or the information does not exist.

A question was raised regarding the measures being taken to deal with international water boundaries/cross border issues affecting jurisdictions like the case of Souris River.

Ms. Isabel Simons-Everett/Mr. Daniel Itenfisu/Mr. Brent Patterson

Alberta Agriculture and Rural Development (ARD)

Presentation: *Alberta ARD PRAC Funded Projects*

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Ms. Simons-Everett and Mr Itenfisu discussed the ARD PRAC funded projects that are being jointly undertaken by SWA, University of Calgary and Alberta ARD. These projects are intended to enhance the Versatile Soil Moisture Budget (VSMB) model, improving current DEM reporting, policies and strategies...

Examples of DEM-related work done within ARD budget and business plan are:

- Peace River Water Hauling Infrastructure Program (PRWHIP) which provides funding and improvement for rural residents to access water and reduce time hauling water. There are about 500,000 people who rely on unregulated, untreated systems in the province. The estimated cost for putting in place this water infrastructure is from \$150 to \$500 million. The ARD Team is developing a 25-year strategic plan with 5 and 10 year goals to identify long-term water supply options
- Current efforts are also underway in reviewing and enhancing water pumping program to respond to extreme weather events in a way that the pumps are used for emergencies such as the Slave Lake.
- The Growing Forward Water Management Program, delivered by ADR water specialists, is designed to enhance drought preparedness.
- Work on crop drought resistance is on-going in ARD.
- The Alberta Drought Risk Management Plan is currently being updated to include excessive moisture. A Drought and Excessive Moisture Advisory Group has also been established to provide recommendations to the ARD Deputy Minister, a move that has been strongly supported by the industry.
- Weather stations have been established and maps showing moisture conditions are available to the public through the Agro-Climatic Information Service (ACIS). There is a plan to put up additional weather stations but funding constraints pose as a problem.

Among the questions raised pertained to current source of the rural water supply, rights-of-way issues for pipelines, links between water use and land use planning.

Updates on PRAC Terrestrial Theme Work

Dr. Jeff Thorpe

Principal Research Scientist

Saskatchewan Research Council

Presentation: *Natural Forests and Grasslands of the Prairie Provinces*

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Dr. Thorpe discussed the current status of the PRAC Terrestrial Theme which focuses on natural forests and grasslands being undertaken jointly with institutional partners across the three Prairie Provinces. He stated that so far SRC has already completed the vulnerability assessment of the Prairie grasslands and the draft report on the SRC Forage Calculator and is presently facilitating work on adaptation strategies for grassland management. Dr. Thorpe provided an overview of the vulnerability assessment results noting the probable future trends based on the modeling changes in vegetation zonation and in grassland productivity using relevant data and information from literature review for two scenarios (cool and warm) and recent trends (1961–1990) and future scenarios (2080s). Other parameters that were analyzed included CO₂ fertilization, impacts of drought on composition and production, biodiversity, wetlands and

invasive species. He also explained the SRC forage calculator as a tool to help determine changes in key variables such as forage yield in order to make projections.

Dr. Thorpe also outlined the work in progress for 2011/12 that will build on the outcomes of the previous activities.

On behalf of Mark Johnston, Dr. Thorpe provided updates on the forestry theme work which involves the vulnerability assessment for the Island Forests in Saskatchewan, the literature review of forest ecosystem vulnerability for the southern boreal forest in Alberta, climate model summaries for future climate in Manitoba and future fire regimes for Western Canada.

Questions raised included the ability of grasslands to bounce back from climate risks such as drought, whether the change in adaptation is determined by averages, whether the climate model is based on native grass and can be applied to cropping systems.

Update from Natural Resources Canada

Ms. Mary-Ann Wilson

Manager, Regional Adaptation Collaboratives, (NRCan)

Ms. Wilson briefly discussed NRCan's RAC program which is being implemented in 6 RAC regions, noting that provinces can establish their own priorities and that most of them focus on water issues. She stated that other RAC theme areas include community adaptation, forestry, infrastructure and tourism, etc. She stressed that in their final stages, all RACs are starting to yield results and success stories. She mentioned that there is an available RAC supplementary funding to support additional RAC initiatives, the approval of which will be known by end September. She also noted that after RAC, which runs up to March 2012, the federal government has also earmarked \$50 million for related future adaptation activities.

Day 1 session was adjourned at 5:30 pm.

DAY 2, SEPTEMBER 21, 2011 (WEDNESDAY)

Mr. Sheldon McLeod opened Day 2 session with a brief overview of Day 1 outcomes and the objectives and process for Day 2.

Manitoba Experience with Recent Flooding Events

Mr. Eugene Kozera, P.Eng.

Director, Water Control System, Management Branch

Manitoba Water Stewardship

Presentation: *Recent Flooding and Flood Mitigation in Manitoba*

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To provide the context, Mr. Kozera discussed the historical trends of flooding in Manitoba, their associated costs and the flood protection and mitigation measures that have been put in place since the 1950 flooding through the 1997 Red River flooding and up to the 2011 unprecedented spring flooding. He highlighted the following issues and measures taken by Manitoba government over the years to address this perennial flooding problem:

- A total of 14 new or expanded community dikes worth \$35.5 million and 1,750 individual flood protection structures valued at \$59 million, along with floodway expansion worth at \$665 million, along with an enhanced hydrometric network, have been put in place.
- The major rainstorm and high precipitation in May and June 2011 were the key drivers in the massive spring flooding that lasted so long, thereby causing water volume down the Assiniboine River to rise dramatically.
- Red River was not an issue but it had to do with the Assiniboine River, Souris River, Saskatchewan River and Lake Manitoba.
- The new flood mitigation measures, which include a \$75 million financial assistance for individual flood protection, \$30 million grants for new community flood protection and \$20 million for 17 projects on the conversion of emergency dikes into permanent dikes, are now underway in Brandon, Shellmouth, Portage Diversion, Lake Martin and Fairford Control Bypass to effectively address the problem.

Questions raised by the participants were related to the Manitoba Water Stewardship's programs that address high water tables and basement flooding, etc., the operation of the floodway (including the control gate) to divert water flows, the total cost of flooding including crop losses, the role of land-use planning in flood mitigation and the potential contribution of wetlands in high river level.

Report on Status of Synthesis Report

Mr. Tom Harrison

Director, Planning and Partnerships
Saskatchewan Watershed Authority (SWA)

Mr. Harrison presented a brief update on the status of the PRAC Synthesis Report for which the Rescan Environmental Services, Ltd. has been contracted to put together. He stressed that this work involves a process of review and synthesis of all information gathered from PRAC key partners from the three Prairie Provinces through review of reports, interviews and consultations and the provision of recommendations on key targeted policy areas.

Questions raised by the participants pertained to the process of summarizing the projects, scope of the report as to whether it will encompass the three Prairie Provinces, with each province having its own report and then compiled into a consolidated inter-provincial synthesis report.

Inter-provincial Drought Communication Framework

Mr. Jeremy Pittman

Social and Economic Scientist
Rescan Environmental Services Ltd.

[CLICK HERE FOR PRESENTATION](#)

Mr. Pittman discussed the rationale for establishing an inter-provincial drought communication framework. He stressed that the federal government (e.g., Agriculture Canada) has done a lot of work on climate risk communication and that provincial-level committees are tasked to integrate efforts of federal and provincial governments. As he explained, there is a need to address the gaps and needs in relation to drought response at the inter-provincial level and create an inventory of engaged individuals and institutions, and a Prairie-wide community of practice.

Mr. Pittman posed the following question to the participants: "What are realistic goals for an inter-provincial drought communication framework?" Their responses included the following:

- Establish a committee representing all three provinces to provide technological and policy advice
- Create a registry for the provinces and stakeholders
- Share drought reports and related information
- Provide a one-stop shop for all
- Establish standards in terms of language, indicators, etc.
- Define a consistent drought adaptation strategy and action plan

- Serve as mechanism for generating and sharing information including successes on adaptation
- Assess existing groups and frameworks linking existing structures to new framework
- Develop measures for assessing process and outcomes
- Identify possible gaps and serve as an interface within the scientific community
- Address discussions related to international communities/levels/other jurisdictions
- Facilitate program and succession planning

Mr. Pittman raised his second question to the participants, as follows: “*What specifically should an interprovincial drought communication framework not try to achieve?*” Responses were:

- Not a unified but a complementary strategy
- Should not be concerned with politically sensitive information
- Should we not try to use DEM, instead of just drought

The participants were divided into small groups and asked to respond to the questions below:

BREAKOUT SESSION # 1: COMMUNICATION

1. What role should Western Water Stewardship Council (or a similar group) have in inter-provincial drought communication?
 - People at the table are not aware of the mandate and so it was difficult to make a suggestion when we are not aware – perhaps it may be an advisory or advocacy role.
 - Managing and coordinating role: Paid staff member – not sure if it still exists
 - A committee on hydrology
2. Are there other agencies or groups which should be involved?
 - Having an advisory group with academics and grassroots groups
 - Let the agencies deal with the stakeholders; keep it manageable and small
 - Assuming this council would be providing a leadership role and not do the work—leave that for other agencies.
3. Should lead agencies from each jurisdiction (AB, SK, MB and CAN) be chosen? Why or why not?
 - There should be lead agencies. For MB, Water Stewardship should lead and involve the Department of Agriculture, SK should involve SWA and AB should include agriculture and water stewardship. In MB, local communities should be involved.
 - Ministries should be involved and the whole thing should be chaired at the DM level or higher.

4. If so, which should be those lead agencies?

- Manitoba has two committees: facilitate communicate within committees. Manitoba Hydro—Non-government participation should be included.
- Federal voice, is it advisory?
- Include American trans-boundary connections/collaboration.
- Do we make this a small group to function efficiently or a larger group?
- The smaller the better
- Let the agencies deal with the stakeholders

BREAKOUT SESSION # 2: MAINTAINING MOMENTUM

5. Multiple groups and initiatives have catalyzed interprovincial communication, but many of these have reached their end.

How can momentum be maintained?

- Use some existing structure that has been around for some time
- Identify local champions and provide them with resources
- Establish a community of practice and tapping into legacy websites
- Document successive projects, media press releases...anything to keep the dialogue going in a public context
- Develop communication strategies including a well-maintained website
- Have an agreement in place e.g., a memorandum of understanding that may be legally binding

What barriers to interprovincial communication exist; and how can we overcome these barriers?

- Provide budget for meetings, etc.
- Get it outside of the government and broaden efforts
- Keep databases and websites current – include an information technology person
- Maintain contacts and knowledge sharing through more workshops, etc.
- Maintain communication to address the lack of formal communication (although it may hinder communication); add more of that into budgeting

Summary of Key Outputs and Outcomes from Group Discussions

The participants were asked to form breakout groups and brainstorm on the following five questions:

1. *What have been the key successes and challenges to date in your region, across the Prairies to complete Water/DEM projects? What have you done to enhance the successes? How have you addressed the challenges?*

The following were the responses provided by the participants:

Successes:

AWARENESS AND CAPACITY BUILDING

- Increased awareness among decision-makers and stakeholders including watershed groups on climate change through workshops, meetings and projects; has overcome scepticism in different ministries and facilitated understanding to also consider adaptation instead of just mitigation (AB); filled gaps in terms of approaching decisions
- Increased awareness and cooperation of GOA departments, watershed groups and the general public in relation to flooding as in the case of Brandon;
- Buy-in from community based on identified need (Winkler); increased awareness and interest of communities/municipalities not previously engaged
- City of Brandon employed an emergency management officer with a plan in place which was followed and successful

CLIMATE DATA, MODELING AND RISK ASSESSMENT

- Facilitated extreme events projections for Assiniboine watershed
- Ability to provide projections to base decisions on
- Positive feedback from the public/sectoral consultation process: sectors provided unique and important perspectives
- Future scenarios showed people's concerns of water supply
- Usefulness of scientific studies such as that of Stephen Quiring

TOOLS AND METHODS

- Working model of how to incorporate planning decisions on water use
- Sharing of tools and information
- Addressing fundamental need to develop realistic operational models to provide good data to make decisions

- Integrated framework that incorporates socio-economic and environmental variables developed for the water demand study
- Water soft path undertaken with interested communities
- MAFRI excessive moisture study; ecological goods and services component for dealing with excess moisture can serve as a template for other areas

ADAPTIVE STRATEGIES AND BEST PRACTICES

- Implementation of water soft path
- Integrated watershed management plans (IWMPs); change in focus of IWMPs to build adaptive capacity and resilience: legislation requires IWMPs be coordinated
- Lots of interest in specific adaptation options

STAKEHOLDER ENGAGEMENT AND KNOWLEDGE SHARING

- PRAC workshops provided the venue for engaging and knowledge sharing among decision-makers and stakeholders across the Prairies
- Learning on both sides by the community and the researcher
- Engagement with stakeholders, including local communities, watershed authorities in risk assessment

INTEGRATION/MAINSTREAMING

- Mainstreaming of climate change in water use sectors in SK
- Integration of climate change adaptation in land-use planning and resource guide developed for communities

NETWORKING, PARTNERSHIP BUILDING AND LEVERAGING FUNDS

- Facilitated inter-provincial and inter-sector collaboration and inter-departmental coordination
- Identification of new champions, new people and groups
- Partnership with and co-financing from other institutions—e.g., Friends of the Earth-Canada for the water soft path initiative
- Water soft path is a good example of a collaborative process for municipalities
- Flooding in Brandon: ability of municipal government to react quickly in partnership with the province
- Funds facilitated to examine the nexus of climate change, water conservation and water efficiency and helped build partnerships
- Success in finding groups applying research findings—Network on adaptation has grown

Challenges:

CLIMATE DATA, SCENARIOS, MODELING AND RISK ANALYSIS

- Be successful in delivering models that provide good data to decision-makers
- Improved collection and analysis of climate data
- Some adjustments made based on expertise and feedback
- Flood forecasting done more on flows; information not being used; need comprehensive forecasting to include extreme events

MAINSTREAMING, SCALING UP AND PROJECT CONTINUITY

- Translating pilot projects (e.g. soft path) into something larger
- Separation between water and terrestrial theme projects when integration is the real gap in policy
- What happens after PRAC?

COMMUNICATION AND KNOWLEDGE SHARING

- Maintaining momentum of interest—cancelled municipal workshops due to snowstorm and spring flooding (Manitoba)
- Synthesis report—unclear goals and objectives. There is still something that could be achieved.
- Inter-federal department workshop must address better communication
- Broader dissemination of knowledge and information; tools needed to keep public informed and people on high alert during flooding and relate that to future scenarios
- Data ownership and sharing/management; formation of LIDAR consortium will resolve these issues (AB)
- Media not adequate (Brandon City)
- Lack of uptake of research or agronomic practices

PARTNERSHIP BUILDING AND LEVERAGING FUNDS

- Insufficient resources (funds and manpower); resulting in change of study scope
- Timely decisions on funding
- Ensuring continuity of PRAC
- Involvement of PRAC—not seeing boundaries

GOVERNANCE

- Decision-makers should look long-term/strategic in securing resources
- Getting decision-makers to incorporate adaptation into current operations; coordination
- Lack of continuity because of cabinet and staff changes
- Priority back to ad hoc management
- Bureaucratic challenges; political commitment to PRAC; need to increase support (AB)
- Competing interests for water (MB)
- Long-term engagement? Not a high priority in comparison to other urgent issues
- Are the right people at the PRAC table? Need to assess
- Restrictions to other federal department involvement—not enough communication
- Staff turnover

2. *In what way are PRAC outputs being integrated into policies, programs and operations? If they are not yet being integrated, how might they be?*

GENERAL

- Integration at high-level-outputs from PRAC; but need to get more data and results; use results in long-term planning; need to have work synthesized
- Results need to be digested and integrated into policy context
- PRAC outputs can be considered in resource management, landuse framework and wetland policy framework
- Use “extremes” “climate projections
- Increase understanding of policy and decision-makers on where should investments in infrastructure be made and where not; Integrate PRAC information into the transportation design work/programs
- Watershed protection: PRAC climate change information can be integrated
- Climate risk analysis will be used to develop policy.
- Pilots will provide policy guidance and serve as a communication tool

ALBERTA

- Drought management plan and programs communicated to policy and decision makers; drought monitoring to be integrated into operations
- PRAC has not helped with integration across departments; changes focus and objectives of management; need more integrated ministries

- Alberta soil moisture outputs need to be assessed
- Other PRAC funded work in AB helped develop SRD 's CCA framework. The terrestrial theme case studies allowed this framework to be tested.
- Integration of climate change scenarios into irrigation expansion scenarios
- Climate change information from PRAC being used to re-assess forest seed zones from PRAC being used to re-assess forest seed zones, to determine whether existing seeds will be applicable to future climate
- Team taking action on climate change—SRD using PRAC information to develop business framework model
- Models developed will be used for existing reporting programs which are used by policy makers. The objective is to provide this information to them in real time; also to provide this same information to producers so that they can make decisions.
- Increase awareness of PRAC into the Alberta government department programming. Plans to invite Dave Sauchyn to speak with AB Environment policy-makers

MANITOBA

- Drought management plan—incorporate climate change considerations
- Planning cycles (water soft paths) working in 6 municipalities to change development plans and integrated watershed management plans; stronger immediate influences on local level policies
- City of Brandon—permanent dikes are being put in place.
- Climate change adaptation guide for land-use planning, aimed at local government
- Water soft path workshops
- AB-SRD's adaptation framework being adopted by MAFRI for grasslands work and the development of its departmental climate change adaptation strategy
- MB initiatives being piloted, then being extended and scaled up; Interlake project pilot has high potential for scaling-up to the rest of the province; integrating ecological goods and services (EGS) into excess moisture;
- Manitoba planning conference 2012 “Beyond Surviving, Planning to Thrive” sub-themes: communities, economies, environment; opportunities for best practices to be discussed drawing on PRAC research; enabling communities to plan for the future

SASKATCHEWAN

- Outputs starting to be integrated into existing initiatives—e.g., SWA
- Meetings being organized with SWA to assess potential to integrate PRAC work into policies.
- Red Berry Lake Watershed SK—expanding PRAC workshop into regional planning (land-use, drought)
- Mainstreaming work will provide input to the strategic direction for water conservation in SK and give sectors immediate tools to improve adaptive capacity.
- SK network of networks—being considered for integration

3. *What are the future collaboration opportunities, with the greatest potential, which would further current PRAC or other initiatives?*

MAINSTREAMING AND PARTNERSHIP

- Align interests with other government (or non-government) research projects (policy, socio-economic, physical)—identify collaboration opportunities to advance PRAC or others' projects.
- Integrate PRAC (or other initiatives) into long-standing institutions and into other provinces and avoid gap between end of PRAC and next project
- Offer in-kind/letters of support/maintain 'informal' networks
- Collaborate with non-profit organizations such as Ducks Unlimited in wetland inventory; municipalities, especially those leading on sustainable development (e.g., Viking AB) and members of Partners for Climate Protection and Federation of Canadian Municipalities; and professional/sectoral associations such as the Association of Professional Engineers, Geologists and Geophysicists (APEGGA), Canadian Institute of Planners (CIP), Canadian Water Resources Association (CWRA) and Environmental Services Group and networks such as Canadian Biosphere Reserves
- Collaborate with Conservation Districts/watershed groups
- Work with Canadian Council of Forest Ministers (CCFM) on the application of climate change vulnerability framework
- Establish stronger relationship/joint partnership with academia including initiatives such as VACEA (Dave Sauchyn) and academia including the University of Saskatchewan's Global Water Security Institute (Howard Wheeler) and Biosphere Reserves or University of Alberta's Office of Sustainability; post-graduate research link Biosphere Reserves with University of Saskatoon
- Ability to get collaboration is adaptation – value of funding “seed money” for collaboration
- Structure collaboration according to “stages”
- Maximize \$53 million of adaptation funds
- Promote cross-ministries/province secondment

COMMUNICATION AND KNOWLEDGE

- Develop communication strategy—Communicate WHY we are doing this work (enhance internal communications)
- Move outside and work with community-based organizations/electorate
- Establish cross-border/international collaboration (e.g. Red River)
- Organize more workshop sessions with focus to share existing information and analysis in relation to working together
- Focus on awareness and capacity building—social aspects rather than scientific (not to downplay importance of science)
- Develop plans for collaboration—schedule and budget, identify benchmark etc. and deliverables over a time frame

- Incorporate lessons learned from the spring flooding into forecasting public communications
- Incorporate into final PRAC report intangibles, methods and value of project continuity Different levels of focus required—sector vs. across sectors
- Integrate efforts on drought monitoring and ‘network of networks’ and establish standards

APPROACHES AND TOOLS

- Adopt holistic, integrated, ecosystem-based approach to water resources management; Water theme must not be separate from DEM theme
- Apply appropriate tools like remote sensing and drought monitoring to generate information to support decision-making
- Integrate ecological goods and services and Beneficial Management Practices (BMPs) into drought and excessive moisture policy and practice

GOVERNANCE

- Embellish existing structures/set-up something new
- Link leaders across provinces
- Continue inter-department work on ongoing projects
- Identify local champions to move PRAC forward
- Establish regional priorities
- Coordinate research and project development
- Determine who will take the lead on the network of networks to ensure seamless communication

4. *What are the best approaches, methods and tools to exploit those collaborative opportunities?*

APPROACHES

- Strengthen organizations that are catalyst for awareness and education; build “social capital”
- Develop a well-defined communication strategy and collaboration plan—objective-identify approaches, methods, tools to advance collaboration e.g. website, “state of basin reports”; Prioritize, schedule and budget
- Establish a clearinghouse—competencies/capacity to undertake projects’ needs—what projects need to be undertaken
- Use pilot projects to transfer tools to institutions
- Establish multi-level coordination beyond provincial; Integrate into Council activities
- Move policy options forward through promotion of best practices—e.g., Ecosystem goods and services and Beneficial Management Practices (BMPs)

- Provide third-party evaluation of outcomes—evaluating whether adaptation options identified actually worked
- Build a more effective science and policy collaboration—e.g., by connecting water issues, sectors, communities and sharing lessons learned—what are agencies doing differently via communications and leadership
- Promote sharing resources e.g., secondment; Peer to-peer transfer

METHODS AND TOOLS

- Use existing approaches/tools (e.g., workshops) to facilitate knowledge sharing among provinces
- Make presentations to senior management
- Value face-to-face vs. other tools—e.g., PRAC value is workshop and forums; critical thinking need face-to-face—right tool, right place—e.g. Climate Change Community of Practice “lacks life”; Forums-in person, webinars and workshops; Transfer of information to professionals and the public; Workshops to incubate collaboration opportunities
- Translate technical reports to appropriate language for the audience. Different audiences have different needs; same theme (e.g. water); different audiences have different interests/focus in same theme – e.g. probabilities, cost-benefit; engineers want numbers, facts/probabilities; municipalities concern about hydrologic drought vs. Agricultural drought
- Synthesis report—various forms of final reports from the full record to the sector-specific synopsis; takes various forms to suit the audience
- Prepare “State of basin reports”
- Develop handbook, highlight examples of best adaptive practices and tools, how they did it and lessons learned from PRAC (including adaptive practices that did not work)—to be disseminated to decision-makers
- Organize a speakers bureau
- Establish a legacy website with access to best practices, tools and current initiatives
- Apply remote sensing for drought monitoring

LEVERAGING FUNDS

- Raise funds to facilitate multi-level collaboration and create accountability; Sustainable Forest Management network—did not continue although interest was there—e.g. linking Soil Conservation Association and PRAC
- Role for federal \$ in seed money—also creates accountability

5. *What is planned and /or what should be targeted for communication and dissemination of PRAC water and adaptation lessons to key decision-makers?*
- Integrate adaptation-related research (including IISD policy recommendations) and action into routine planning and policy processes; Planning must incorporate climate variability and extremes; Establish policies towards adaptation—should formalize this (summary idea). Provide the outcomes to a variety of agencies; Key policies that need to be addressed
 - Create a plan for collaboration to sustain Prairie-wide collaboration; multi-stakeholder and integrated approach; establish a network of networks—adds strength to communications “united front” on identifying and dealing with water issues; validate and problem-solving new ideas; Re-framing the idea of a collaborative as an adaptive response itself—this is what helps society learn. The process is an output. Seed money helps encourage “non-traditional” collaborations to deal with the issue. How to sustain after seed money ends?
 - Conduct research and risk assessments to generate best scientific information to support decision-making; Prepare an economic assessment to generate funding for the three Prairie provinces
 - Develop a brief PRAC summary for policy-makers—10 page-ish; 8 bullets with shadow boxes to provide examples and “to apply the knowledge”; with compelling stories that are relatable
 - Produce video-recorded interviews and reports highlighting lessons learned and best practices, including what did not work; Consistent message—highlights key messages to cover and define audience; standard notes/speaking notes
 - Develop support tools for municipalities by providing examples/scenarios that are regionally relevant and also for local champions in a way that stakeholders can relate to
 - Disseminate PRAC synthesis (including province-based) reports and outputs to a wide audience including Western Water Stewardship Council, Prairie Provinces Water Board, academic/research centres, elected officials, other government agencies, municipal officials, NGOs, utilities and in future conferences to promote enhanced awareness, broaden the network and generate funding support
 - Facilitate presentations at national and regional conferences and events such as the 2012/2013 Canadian Water Resources Association (CWRA) conference, Association of Manitoba Municipalities (AMM) annual convention or 2012 Manitoba Planning Conference, APCPS and APPI conferences; Western Premier’s meeting, Manitoba Conservation District Association, Irrigators Association, Capturing (building) opportunities
 - Identify local champions—other projects that are already occurring can be part of it Engage more with stakeholders
 - Develop capacity building program for decision-makers and stakeholders e.g., PICKS—online course on climate change being developed for the AB government—to promote initiatives, etc.
 - Leverage PRAC outcomes to ensure project continuity and inter-provincial/inter-sectoral collaboration

International Research Initiative on Adaptation to Climate Change (IRIACC)

Dr. Dave Sauchyn

University of Regina/Prairies Adaptation Research Collaborative (PARC)

Presentation: *Vulnerability and Adaptation to Climate Extremes in the Americas (VACEA)*

[CLICK HERE FOR PRESENTATION](#)

Dr. Sauchyn briefly discussed the International Research Initiative Adaptation to Climate Change (IRIACC), a joint funding mechanism of the International Development Research Centre (IDRC), the Social Sciences and Humanities Research Council (SSHRC), Natural Sciences and Engineering Council (NSERC) and the federal government of Canada, from which the VACEA project obtained funding support. He then outlined the overall objective, the vulnerability assessment model and research themes, the methodological framework of the research project. Dr. Sauchyn also highlighted the innovative features of the joint research in relation to science and knowledge gaps that will provide a comparative assessment of adaptive practices and adaptation options in six river basins in five countries, using consistent methodologies and an integrated risk assessment.

Canadian institutional partners, as Dr. Sauchyn added, include various relevant Alberta and Saskatchewan government departments and agencies as well as select watershed councils/associations from these two provinces. He identified watershed research sites which include rural agricultural communities, indigenous populations and river basins in the five countries covered by the project, namely, Brazil, Colombia, Argentina, Chile and Canada.

Dr. Sauchyn concluded his presentation by outlining the expected results in relation to advancing the current state of knowledge and informing policies or practices.

Questions raised by the participants pertained to other collaborative projects supported by IDRC in Western Canada, how the community in the research sites will be engaged and whether standardized methods will be employed by the project.

Next Steps/Suggestions for Water and Drought and Excessive Moisture Work—Synthesis Report, from Outputs to Policy Outcomes

In the final plenary, the participants noted the following critical areas that need attention and further synthesis:

COLLABORATIVE MECHANISMS

- Maintain and improve the communication and network created by PRAC; Need to communicate why we are doing this work to all our internal groups and having communications with all our external partners. Need for a lead;
- Other projects could be linked to or supplemented by PRAC
- Provide effective response to emergency issues – community mobilization, etc.
- Should be able to relate to a higher level authority – helps deal with things we know, but should also help with things we do not see (i.e., building social capital)
- We had a system in place through the Prairie Farm Rehabilitation Administration (PFRA). Do we need to re-invent the wheel? Need these processes in place to build social capital.
- Having a network in place to address issues short notice is great.
- Face-to-face communication: Generating a true community networking system seems to work better than through recent technologies.
- Collaborative mechanisms are an adaptive management strategy.

NETWORK OF NETWORKS

- Monitoring or gathering of information and interpretation is important. We need to know when we are going into a drought.
- The best way is to collaborate with all bodies (agriculture, etc.)
- Need for a lead
- There needs to be sharing of quantitative and qualitative data and information and merging them to provide scenarios.

THE NEXT SIX MONTHS: WHAT DO WE NEED TO JUMP ON?

- Determine clearly very soon what the synthesis report is supposed to do and who it is directed towards. Ideally, we would want to see the synthesis report to allow us time to think about the next steps. Will there be an extension?
- Continue the good value from the projects started (whether there is a PRAC 2 or not) and bring this forward to key decision-makers.
- PRAC Synthesis Report needs a project manager, the process to produce the report will take a long time but the funds need to be expended by end fiscal year.

- Develop a protocol for a PRAC communique. The synthesis report will be key.
- Consolidate the gains from PRAC as a whole, address different disciplines, bring essential research to the forefront and find solutions to bring to policy makers
- Monitor and measure progress on how we are adapting
- Prioritize needs given limited funds
- Explore continued collaboration and network of networks in PARC.

Final Forum

Mr. Sheldon McLeod announced the planned Final PRAC Forum slated on February 15–16, 2012 in order to elicit ideas and suggestions from the participants on the agenda, format, presentations and potential invitees.

IDEAS FOR AGENDA ITEMS:

- Overview of the PRAC project
- Synthesis report
- Media
- Lessons learned and gaps
- Next steps

FORMAT AND PRESENTATIONS:

- Parallel streams on the number of topics
- 4th theme in RAC – have the 4th one as plenary
- Open to other groups?
- Poster session

IDEAS FOR INVITEES

- Senior bureaucrats, Government, decision makers
- Researchers

In closing, Mr. Randall Shymko stressed that this Water and DEM forum is part of the PRAC governance forums with the aim of celebrating successes and sharing knowledge among the participants. He expressed hope that the participants will attend the 2012 Final Forum which will involve discussions and presentations on PRAC outputs that will inform the development of the PRAC synthesis report. Finally, he thanked all the participants from the three provinces for attending the forum, the NRCan for its funding support, the planning team and the IISD for facilitation support.

APPENDIX A (WORKSHOP AGENDA)

AGENDA

Day 1: September 20, 2011

DELTA HOTEL

September 20	TOPIC
11:15 a.m. –12:45 p.m.	REGISTRATION AND LUNCH (provided at no charge to participants)
12:45 –1:00 p.m.	Introductions, overview of Forum (S. McCleod, facilitator)
1:00–2:45 p.m.	Provincial Updates on Water
2:45–3:15 p.m.	NETWORKING BREAK
3:15–5:00 p.m.	Provincial Updates on Drought/Excessive Moisture
5:00–5:15 p.m.	Update on PRAC Terrestrial Work across the Prairies (J. Thorpe)
5:15–5:30 p.m.	Update from Natural Resources Canada (M. Wilson/B. Horton)
7:00 p.m.	GROUP DINNER—SPAGHETTI FACTORY, FORKS MARKET RESTAURANT (at own expense)



Government of Saskatchewan



Natural Resources Canada

Ressources naturelles Canada



(DAY 2 SPONSOR)

AGENDA

Day 2: September 21, 2011

DELTA HOTEL

September 21	TOPIC
8:00–8:15 a.m.	Overview of Day One outcomes; Day 2 meeting objectives/process (S. McCleod)
8:15–8:45 a.m.	Manitoba Experience with Recent Flooding Events (E.Kozera, Manitoba Water Stewardship)
8:45–9:00 a.m.	Report on status of Synthesis Report (T. Harrison, SWA)
9:00–10:15 a.m.	DEM Theme Group Discussions (facilitated by S. McCleod)
10:15–10:30 a.m.	NETWORKING BREAK
10:30 a.m.–12:00 p.m.	Inter-provincial Drought Communication Framework (J. Pittman, Rescan Environmental Services Ltd.)
12:00–1:15 p.m.	CATERED LUNCH BY DELTA HOTEL (provided at no charge to participants)
1:15–2:30 p.m.	Water Theme Group Discussions (facilitated by S. McCleod)
2:30–3:00 p.m.	BREAK
3:00–4:00 p.m.	Final Plenary Discussion to review/report back and discussion of DEM and Water Theme break-out sessions; opportunities for the future across the prairies, within each province
4:00 p.m.	ADJOURN