

Municipal Planning for Climate Adaptation

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For Manitoba Planning
Conference

Brandon, MB

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Manitoba



Impacts of Climate Change

- Greatest impacts of climate change on the Prairies:
 - ***increased scarcity of water resources and greater variability of water supply***
 - ***increased potential for severe drought, extreme rainfall events and other severe weather events***



Adaptation is Not New

- The Prairies are prone to extremes of conditions
- Conservation Districts/IWMPs
- Planning Authorities/DPs
- Environmental/Sustainability Plans
- Flood Mitigation measures
- Sustainable Farming Practices

What is Climate Adaptation

- Reducing the impacts of climate change in a region, sector, community
- Taking advantage of potential opportunities
- Can complement mitigation-ie tree planting
- Adaptation is best integrated into existing processes, plans and operations

Terminology

- **Mitigation** – Measures to reduce greenhouse gas sources and emissions and future climate change (e.g., Reduce use of fossil fuels and Reduce emissions from landfill, land-use changes)
- **Adaptation** – Measures to reduce impacts from climate change already underway and expected, while maximizing beneficial opportunities (e.g., Prepare for extreme weather conditions such as heat and drought and prepare for extreme events).
- **Vulnerability** – Degree to which a system is susceptible to adverse effects, including climate variability
- **Risk** – Chance of injury/loss due to frequency of occurrence and severity of consequence. Affected by stakeholders' perceptions.

Prairies Regional Adaptation Collaborative

- **What is the PRAC?**
- Federal-inter provincial project
- One of six RACs across Canada
- Provincial, municipal, other partners
- Key driver – anticipated increase in water scarcity and supply, changes in distribution
- A key provincial adaptation initiative

PRAC Goal and Themes

Goal

increase capacity of targeted decision makers to integrate climate adaptation planning into policies, programs, decision making processes

Themes:

1. Water Resources Management

-demand, supply forecasting

2. Drought and Excessive Moisture

-provincial and inter-provincial drought planning

3. Terrestrial Ecosystems

-grassland, rangeland vulnerability

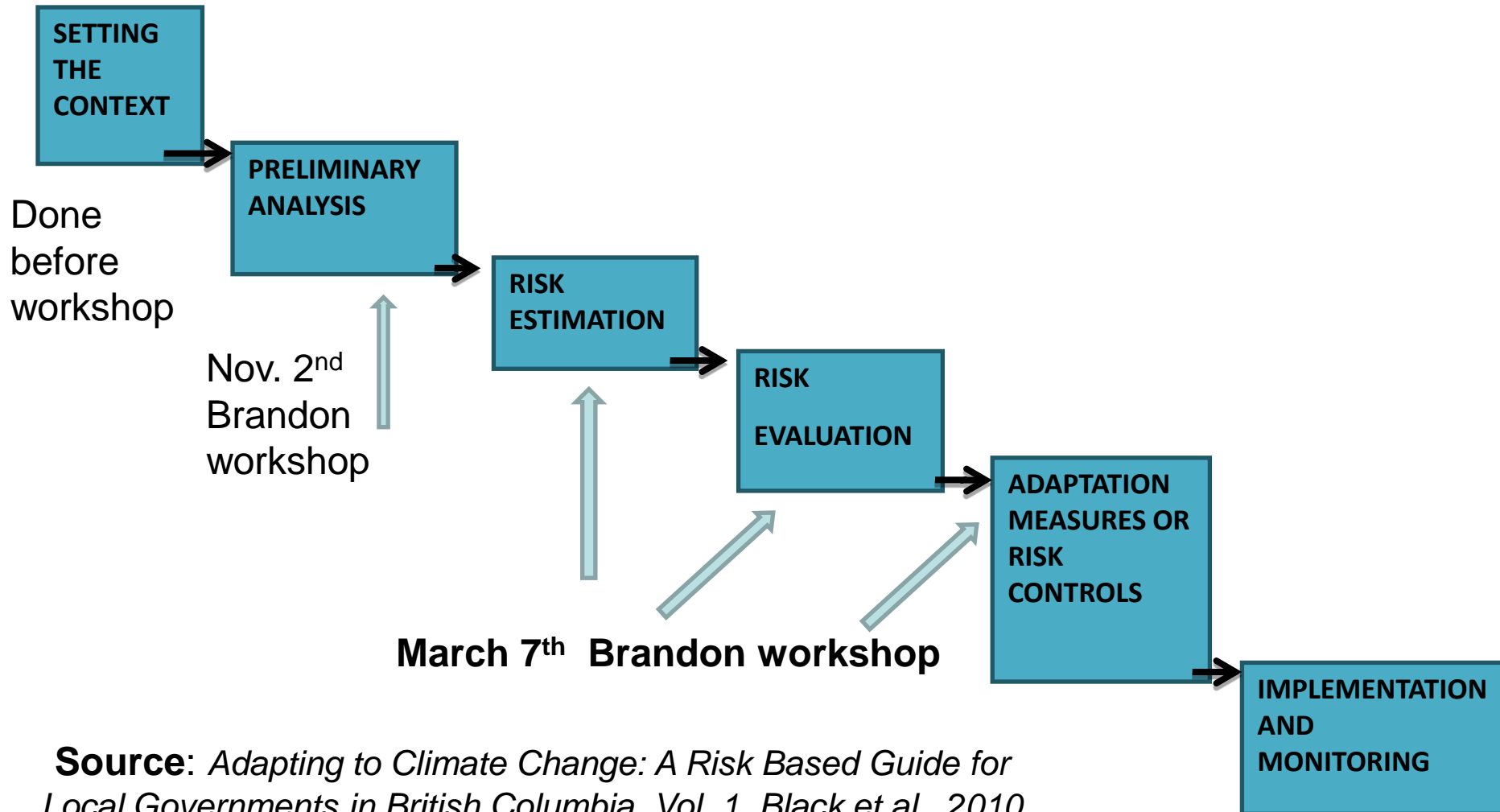
Municipal Climate Risk Planning Across Canada

- Clyde River's Community Climate Change Adaptation Plan
- Melita and area Heat Alert Response System
- London, Ontario's Climate Change Adaptation Strategy
- Elkhorn, BC
- Edmonton's Urban Forest Management Plan
- Regina's Water Conservation Program
- Planning for Sea-Level Rise in Halifax Harbour
- City of Kamloops' Wildfire Protection Plan
- Le Goulet's Climate Change Adaptation Plan
- Preparing for Storm Surges in Annapolis Royal, Nova Scotia
- Ontario, BC and Atlantic RACs doing community workshops

Municipal Adaptation Planning

- Part of Drought and Excessive Moisture theme of PRAC
- **Aim: increase capacity of municipal decision makers to integrate climate adaptation planning into local planning decisions**
- Planning process and committee in place since late 2010
- Working with Brandon and TCW PD
- City of Winnipeg implementing a similar planning process: Workshop March 2011, video project on the go

MAP Process



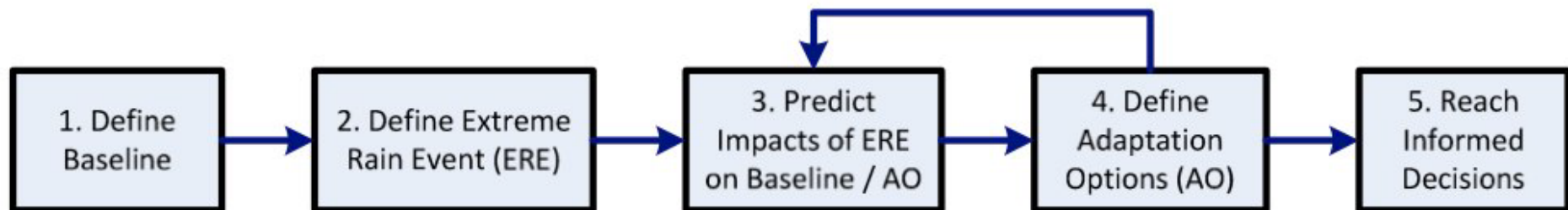
Source: *Adapting to Climate Change: A Risk Based Guide for Local Governments in British Columbia, Vol. 1. Black et al., 2010*

Preliminary Findings from MAP

- Vulnerabilities
 - Aging infrastructure
 - Flooding
 - Less predictability of seasonal weather
- Risks
 - Flooding
 - Drought
- Responses
 - Provincial program support
 - Staff training in-house and with other municipalities

LIRA Project

- Cost/benefit decision support developed by AESB
- Several pilot projects in Saskatchewan
- Focus on heavy rain events, rural/agricultural infrastructure, economic analysis

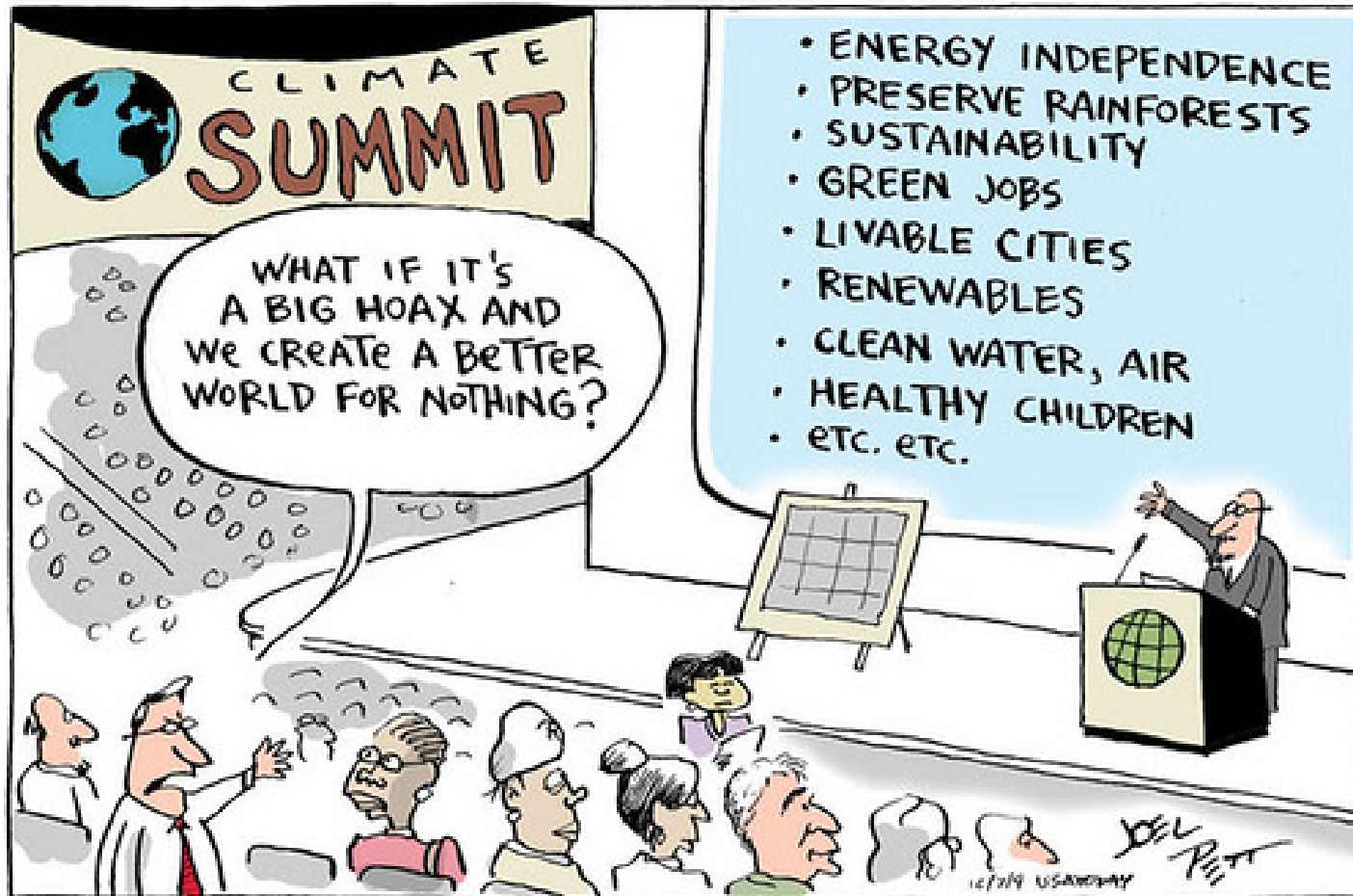


Preliminary Findings from LIRA Projects

- Scoping study at watershed level with Little Saskatchewan River Conservation District: Participants interested, see its potential applicability
- Pilot study in Corman Park, SK: Zoning as cost-effective means to reduce risk

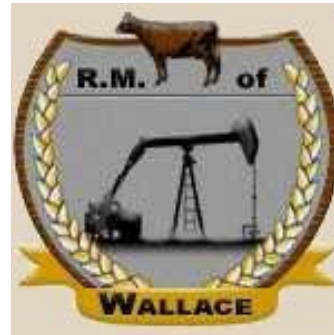
Other Climate Change Adaptation Planning Tools & Resources

- Changing Climate, Changing Communities: Workbook for Climate Adaptation (ICLEI)
- Infrastructure Climate Risk Protocol (Engineers Canada)
- A Guide for Quebec Municipalities for Developing a Climate Change Adaptation Plan (Ouranous)
- Municipal Resources for Adapting to Climate Change (FCM)
- Climate Change Adaptation Framework Manual (Ministry of Sustainable Resource Development, Alberta)
- **Climate Change Adaptation Planning : A Handbook for Small Canadian Communities (CIP)**
- **Climate Change Adaptation Planning Resource Guide (Province of Manitoba)**



Planning is always a good idea

A project in partnership with



TOWN OF VIRDEN

