Flood research partnership: Promoting stakeholders' participation in sustainable floodplain management

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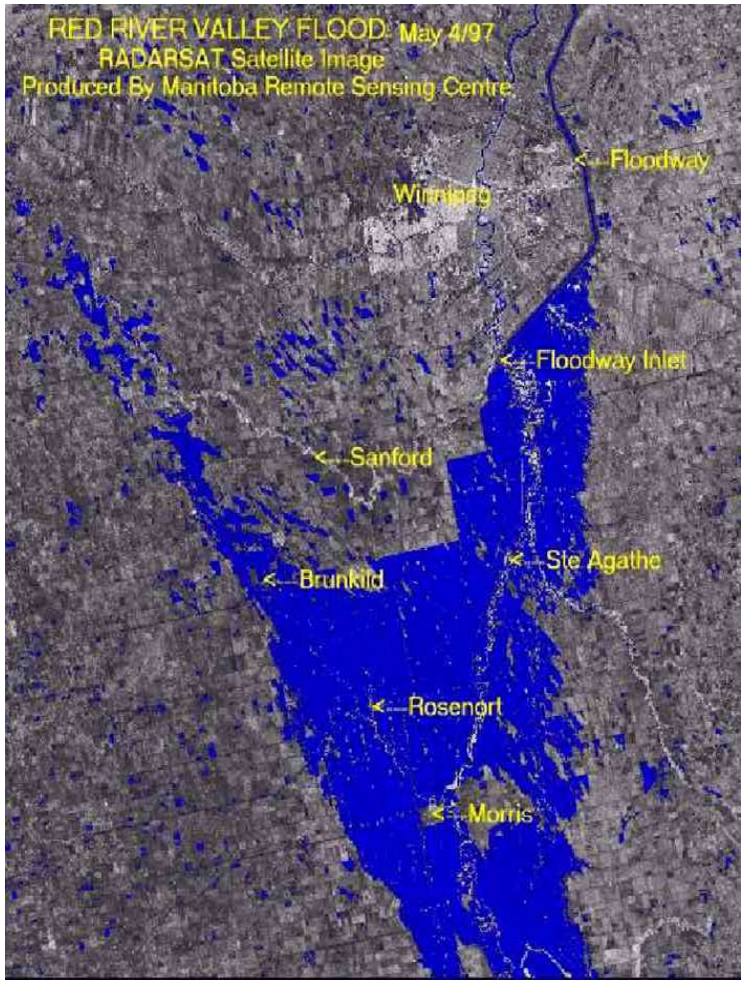
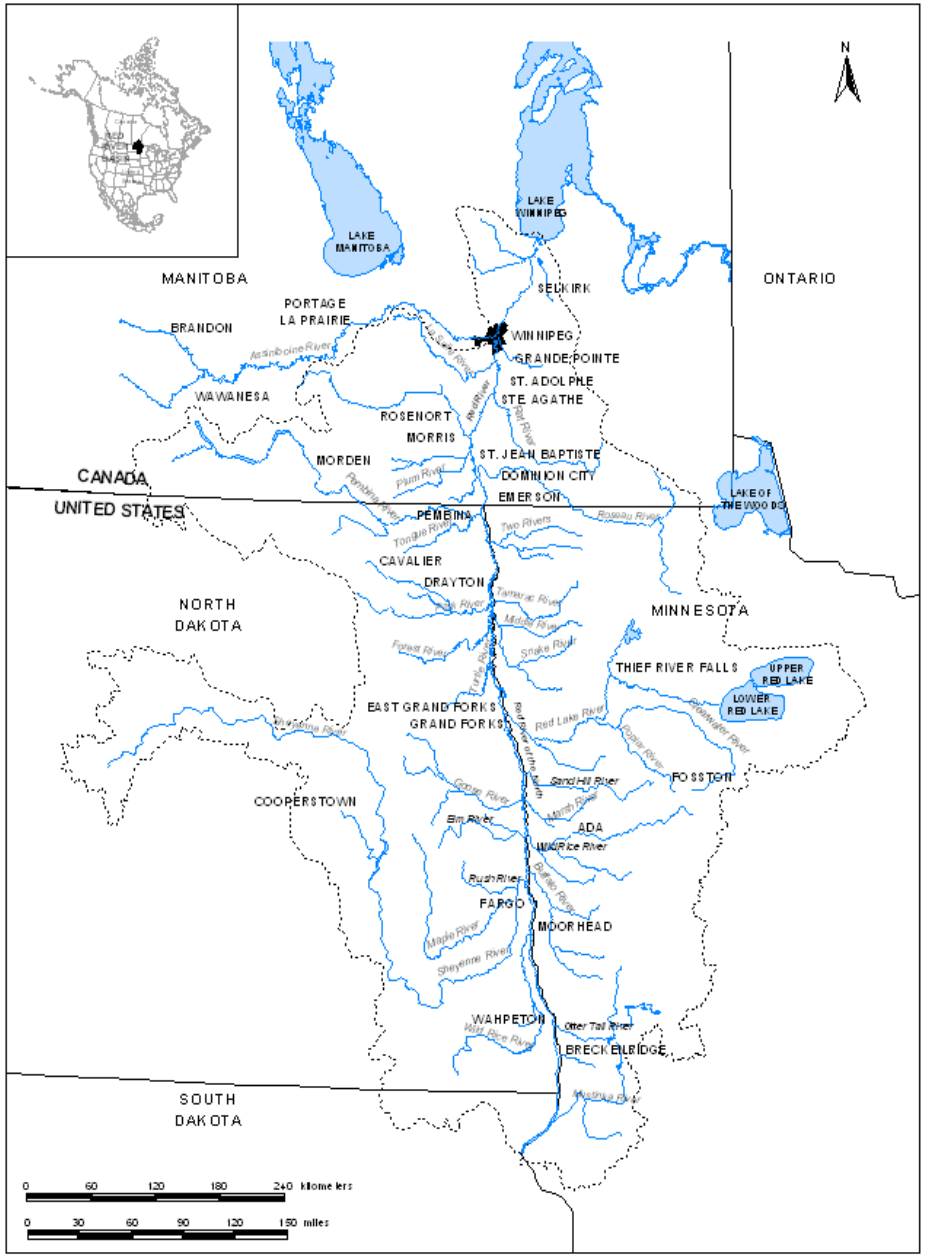
Short history

- Flooding in the Red River basin is natural hydrometeorological event
- Historical floods: 1826; 1950; 1997
- Size of the basin and flow direction
- No single solution to the flood mitigation challenge



Red River Basin

- 116,500 km^2
- 89% in USA
- 11% in CDN
- very flat 10cm/km
- 877 km long



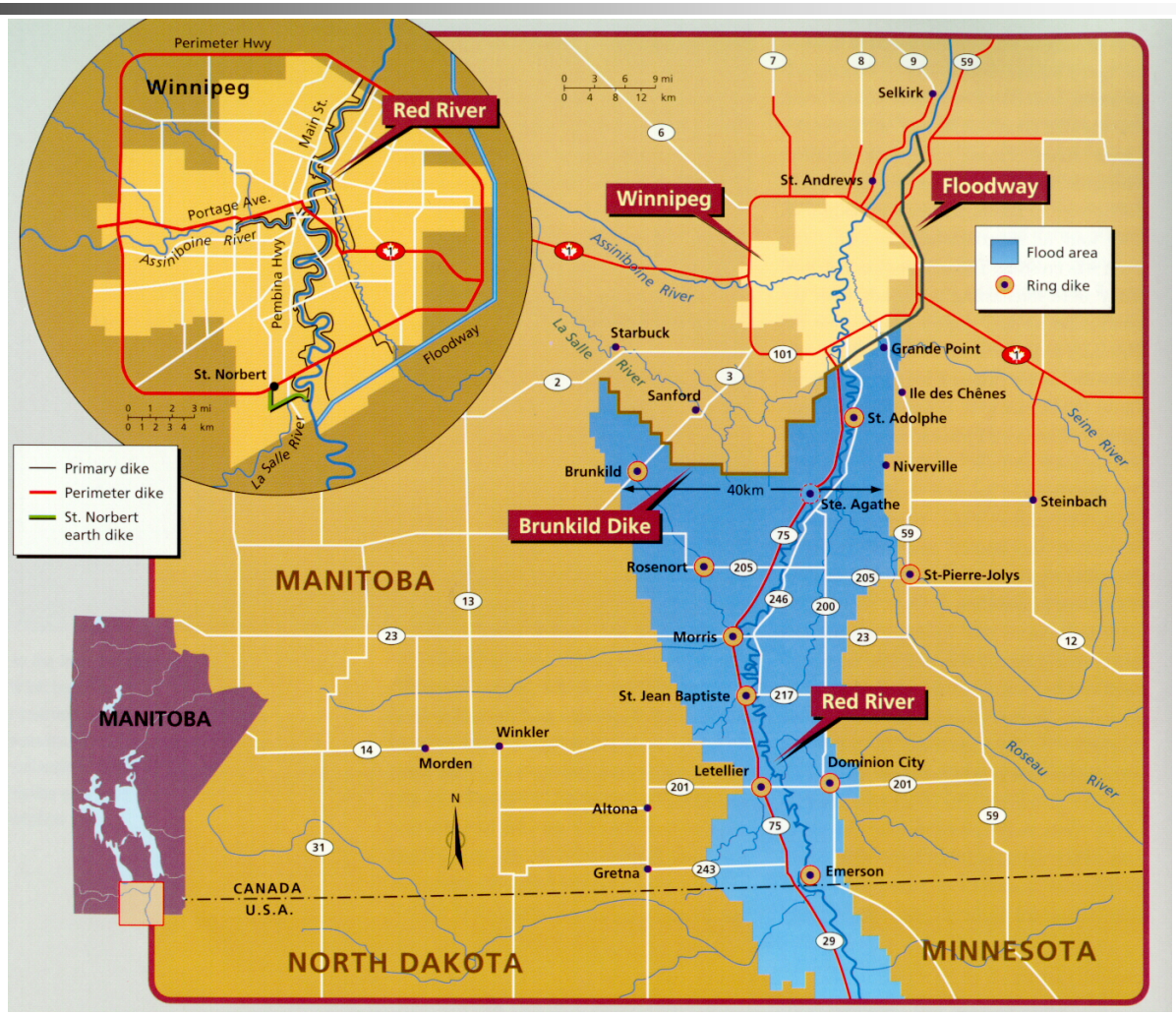
1950 Flood

Damages: ~ $700 million

100,000 people evacuated

10,000 homes flooded

Flood protection measures



Red River floodway

Red River floodway

Shellmouth Reservoir

Portage diversion

Primary dikes

Ring dikes – Morris

Ring dikes – St. Adolphe

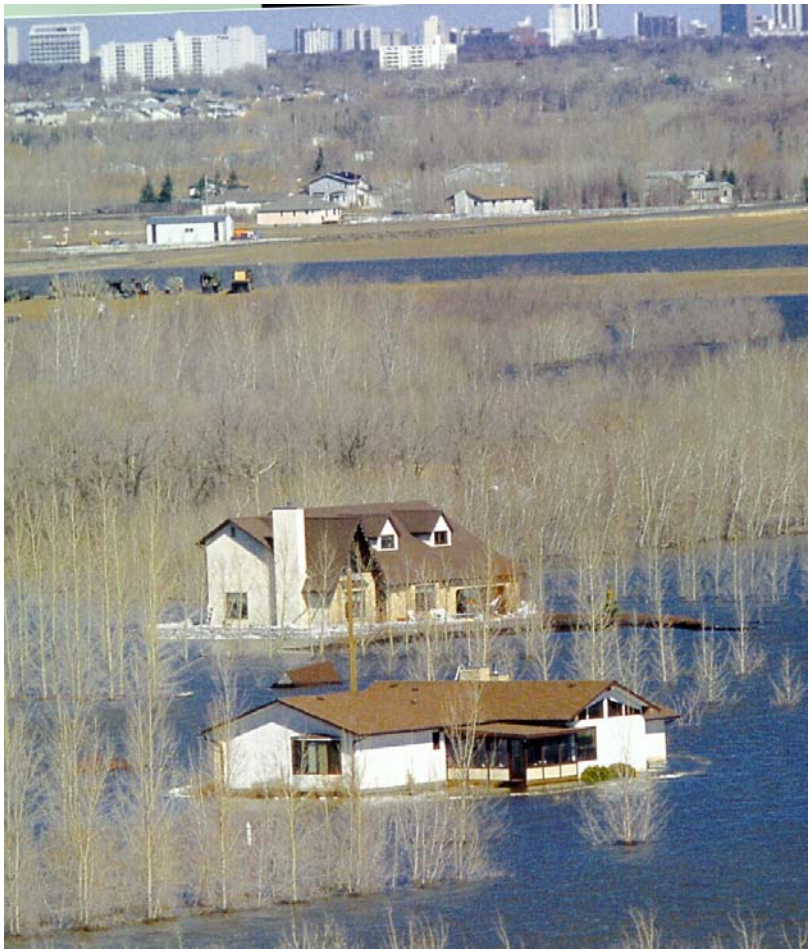
Non-structural measures

- Flood forecasting and warning
- Flood fighting
- Post-flood recovery
- Land use regulation and mapping
- Flood proofing

1997 flood

- 4,587 m^3/sec - flood of the century - 2,000 km^2 Red Sea
- 28,000 people evacuated; 8,700 soldiers
- Many temporary dikes; 6 million sandbags; Brunkild dike (40 km in 72 hours)
- Lost Grand Point and St. Agathe
- Many new programs in place
- International Joint Commission - Red River Basin Task Force (http://www.ijc.org)

1997 flood – Grande Pointe

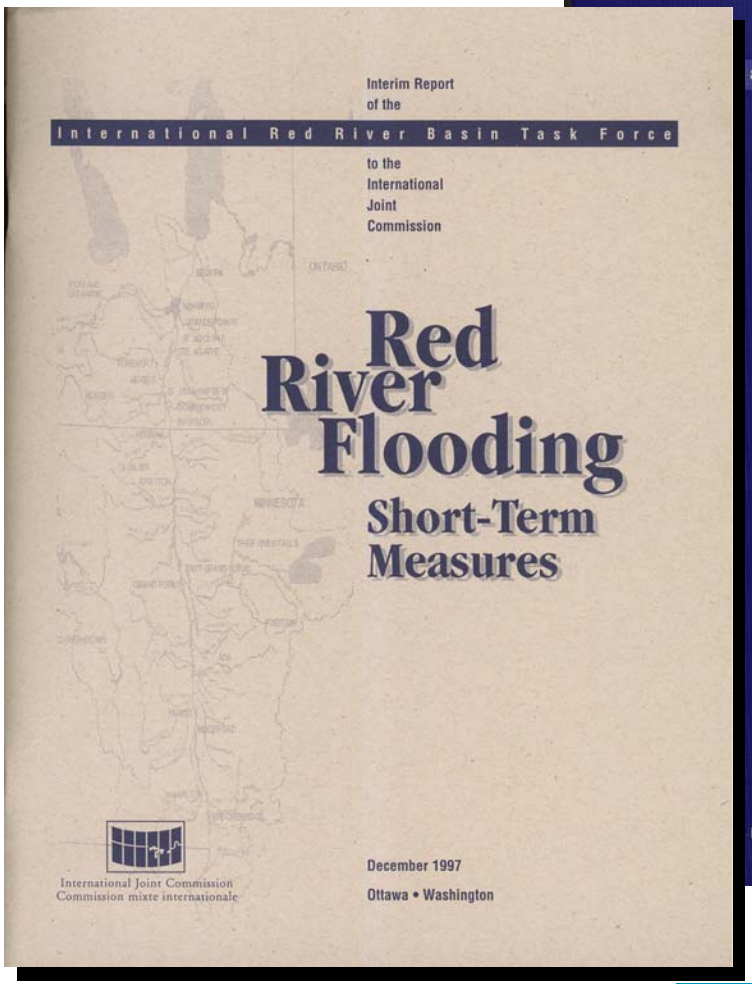


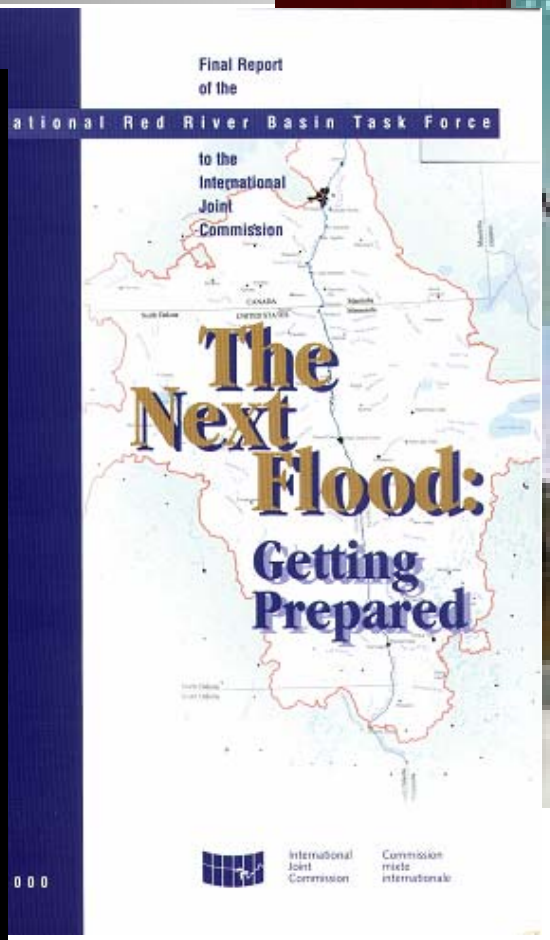
1997 flood – Ste. Agathe

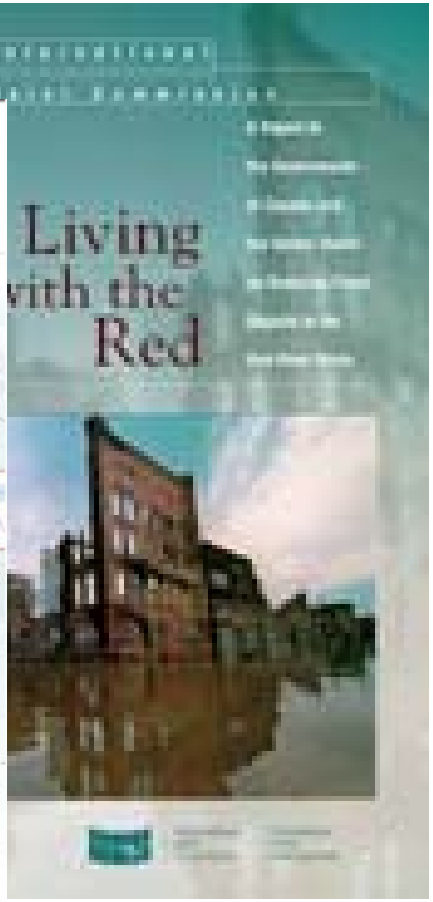
1997 flood

- Large social, environmental and material damage

IJC Task Force







Project

- Concerns of floodplain stakeholders
- Project supported by SSHRC
  - 4 Universities
  - Work with communities
  - Values
  - Perception of flood risk
  - Computerized support for participatory decision making