Emerging Scarcity in a Land of Plenty: Water and Water Policy in Canada

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Overview

1) The Canadian national context and policy stage
2) The provincial context: Alberta
3) The policy context for Alberta
4) Challenges, risks and opportunities
5) Questions and Discussion
Watersheds and Flow

Canada's continental watersheds

Drainage areas:
- Pacific Ocean
- Arctic Ocean
- Diverted drainage areas
- Hudson Bay
- Gulf of Mexico
- Atlantic Ocean
- Internal drainage area

Drainage flow (the wider the arrow, the greater the flow)
Canadian (federal) Water - The Context

• Water is an abundant & critical resource in Canada
  – Optimistic assessment: 20% of global freshwater (mostly ice)
  – Realistic assessment: 1%-6% renewable freshwater
  – Major element in socio-economic development of the country
  – Major element of other industries:
    • Forestry
    • Agriculture
    • Energy (hydro-electric)
    • Petroleum (particularly for Alberta)
Canadian (federal) Water Policy

• Three phases of development
  1) Pre-regulation
  2) Public law
  3) Market-based, co-operative and comprehensive substance instruments
     – Shift away from C&C via devolution toward “watershed governance”

• Constitutionally, authority for natural resources rests in the provinces (s. 92)
• Tempered by national (CWP 1987) and international (RAMSAR) agreements
• Based in two developmental “myths” oriented toward supply:
   – Abundance
   – Stability
• Recently shifted to include issues of quality (Walkerton 2000), North Battleford (2001), Aboriginal communities across the country (permanent boil water advisories)
The Federal Water Policy...recognizes that water is, at present, Canada's most undervalued and neglected natural resource. In no part of Canada is fresh water of sufficient quality and quantity that it can continue to be overused and abused ....Canadians must start viewing water both as a key to environmental health and as a scarce commodity having real value that must be managed accordingly (Environment Canada)
Federal Water Policy

2 Goals:
1) Protect and enhance the quality of the water resource;
2) Promote the wise and efficient management and use of water;

5 Strategies:
1. Pricing
2. Science
3. Integrated planning and management
4. Legislation (w/ federal jurisdiction eg: fisheries)
5. Public Awareness
Case Study: Alberta

• Selection criteria:
  1. Variability in supply (historically assessed);
  2. Increasing urban/domestic demand;
  3. High agricultural demand;
  4. Obsolete licensing system (FITFIR);
  5. Increasing industrial demand (energy sector);
  6. Extant (significant) flow reductions already (up to 84%)
  7. Recent (2004) water shortages and over-allocations;
Alberta’s Basins
Alberta: 2 Zones
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Alberta: Hydrology, Geography and Demand

- Surface drainage is to the north;
- Majority of supply is to the north (80%)
- Majority of demand is to the south (2.5 million people + agriculture)
  - Could grow to 6 million +
- Mean annual volume = 9 billion cubic meters (2.377 trillion gallons)
- Heavy irrigation use in the White Zone (highest in Canada – note: Palliser Report)
Increasing pressures...

• Climate variability in the south;
• Over-allocated basins in the south;
• Anticipated Industrial demand:
  – Edmonton region: consumption to increase x 10 by 2020 (to 80,000,000 cubic meters pa.)
  – Athabasca River: 500,000,000 cubic meters pa.
  – Oil Sands 500 T litres (more than urban consumption for the province)
  – Can be absorbed in the north (approx. 37% of allocation)
Alberta: Water Policy

• First in Time, First in Right (FITFIR) c. 1894
• North West Irrigation Act vested authority in the Crown, began issuing licenses
• Two core principals:
  – Appropriation
  – Apportionment (guaranteed access)
• Priority of access is by seniority (FIT)
• Permits 100% withdrawal of allocation (assumes abundance)
  – Most heavily allocated rivers in the country
  – No incentive to conserve
  – No mechanism to transfer until 1996
  – Junior licensees can “run out of water” due to upstream consumption
  – No new licenses in southern basins (eg. South Saskatchewan)

- Seen as a ‘landmark’ approach
- 3 core goals:
  - Drinking water supply
  - Healthy aquatic ecosystems
  - Waters supplies for the economy
- Largely scientific/technocratic
- Limited opportunity for community-based monitoring or management
- No implementation strategy (devolved to stewardship groups)
- No wetland policy
- No revision to FITFIR
- Increasing emphasis on market instruments and approaches
  - Eg. Mitigation banking for wetlands
  - Not well-documented/assessed in the province
Alberta: Challenges and opportunities

• Anticipate significant and increasing demand
• Anticipate variability in supply (regional & seasonal)
• Increasing need for transfers and affiliated infrastructure
• Anticipate increasing political (urban/industrial/agriculture) pressure for access and continuity of supply
• Crisis point on the horizon? – “Peak water”
  – Possibility of public engagement and deliberation?
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