

WATER SOFT PATHS: CONCEPT AND OPPORTUNITY

David B. Brooks

Director of Research

Friends of the Earth Canada

FUTURE LIES WITH DEMAND, *NOT* SUPPLY, MANAGEMENT

- **DEMAND-SIDE MANAGEMENT**
 - **Efficiency**
 - **Pricing**
 - **Environmental Economics**
- **WATER SOFT PATH**
 - **Conservation**
 - **Equity**
 - **Ecological Economics**

TWO PURPOSES

- **Contrast water soft paths with hard.**
- **Review methodology and feasibility of soft path analysis.**

(Sources: Last slide)

DIFFERENCES BETWEEN THE TWO PATHS

HARD PATHS

Large, centralized sources of supply

Demand is macro function of growth

Waste moved to central plant and treated chemically

SOFT PATHS

Small, distributed sources of supply

Detailed attention to end-uses

Waste treated nearby or on-site with bio-mimicry

DIFFERENCES IN GOALS AND APPROACH

- **APPROACH:** Reflects not technologies *per se* but different socio-political choices about governance of natural resources.
- **PURPOSE:** To derive policy conclusions about how to achieve sustainable and equitable natural resource management.
- **EXPERIENCE:** Just as rigorous as conventional analysis -- which does not mean it is free of risk or uncertainty.

WHY WATER IS SIMPLER THAN ENERGY

- **ONE FORM, NOT MANY**
- **JUST FOUR SOURCES**
(Surface; ground; sea; recycled)
- **LOCAL MANAGEMENT**
- **SIMPLER TECHNOLOGY (NO
NUKES!)**
- **LIMITED DIRECT TRADE**

WHY WATER IS HARDER THAN ENERGY

- **WATER IN = WASTEWATER OUT**
- **MORE STAKEHOLDERS**
- **QUALITY DIFFICULT TO DEFINE**
- **ESTHETIC & CULTURAL ROLES**
- **ECOSYSTEM SECTOR**

FOUR PRINCIPLES OF SOFT PATH ANALYSIS

- **Change concept of demand from product to service.**
- **Match quality of resource supplied to quality required by end use.**
- **Start from some water-efficient future and work backwards (“backcast”) to find a feasible way (“a soft path”) to get there.**
- **Ensure ecological sustainability and human equity at every step.**

1: FOCUS ON DEMAND

- **Start with gains from WDM -- technical fixes or economic fixes**
- **Add demand-sensitive pricing**
- **Identify service provided by each end-use and find new ways of providing it**
- **If necessary, change the service**
Not hard but takes lots of time

2: MATCH QUALITY TO END-USE NEED

- High-Quality resources can do more for us, but are rare and costly
- Need only small amounts of Hi-Qual water but huge amounts of Lo-Qual
- Review each flow (source to end-use to effluent) to minimize quality losses

Difficult But Not Time Consuming

3a: BACKCASTING

- **Adopt some projection of economy (>25 years to allow time for capital turnover)**
- **Change key water characteristics to yield future society with efficiency, equity and sustainability**
- **Build two future models -- one with and one without change in habit and process**
- **Ensure each model hangs together**

3b: BACKCASTING

- Create a soft path by designing policies and programs to get from there to here
- Test each part of path (for each model) for desired characteristics
- Comparative statics; not dynamic

Draw policy conclusions!!!!

3c: BACKCASTING

- Backcasting is the most complex part of the analysis:

Difficult and Time Consuming

- Many iterations. How many?

Until results are good enough to be persuasive – not to you; to other stakeholders!

WHAT DID YOU FORGET?

- **Is all wastewater included?**
- **Does ecosystem have enough water to remain healthy?**
- **Are some regions or groups or sectors left at a disadvantage?**
- **Did you allow for effects of climate change on SS and DD?**

LESSONS: DSM AND WSP

DSM

Efficiency gains ~ 1/3

Market driven

Less risky than
Supply Measures

Weather Independent

Implementation
decentralized

WSP

Total gains ~ 2/3

Triple Bottom Line

Risk between Supply
and WDM

Climate Chg Built In

Even more
decentralized

RECOMMENDATIONS

- **DON'T WAIT: START WITH DSM**
- **PRICE WATER AND WASTEWATER**
- **FOCUS ON AVOIDED COSTS (80%)**
- **BUILD A DEMAND DATA BASE**
- **ELIMINATE INSTITUT'L BARRIERS**
- **EXPERIMENT WITH WSP ANALYSES**

***DSM increases efficiency
but ultimately
sustainable production
depends upon
sustainable consumption,
which is what WSP
creates***

SOURCES

Brooks, David B. (2005)

**Beyond Greater Efficiency: The Concept of
Water Soft Paths**

***Canadian Water Resources Journal*, 30(1).**