



Ingenuity Trumps Hard Tech

The water soft path is the best bet for Canada's public and ecological needs.

Oliver M. Brandes and David B. Brooks

THROUGHOUT HISTORY, water management has meant constructing dams, digging and drilling wells, and extending canals and pipelines into cities and farmers' fields. Industrialized nations have been spectacularly successful at delivering vast amounts of water wherever and whenever it was required. In wealthy countries, water has been readily available to humans, their farms, factories and power-generating stations, with sufficient quantities left over for gardens, parks and swimming pools. Imagine Las Vegas.

Reducing demand appears to be our best “source” of water.

Despite how well the system has worked historically, the day has passed when water planners can rely on new supplies to satisfy demand. Although many Canadians believe that freshwater resources are limitless, the reality is that only a small proportion of our water is both truly renewable and located close to where we live. A 1995 World Bank report entitled *Toward Sustainable Development of Water Resources* indicates that direct costs to develop additional freshwater double every 10 to 15 years. Climate change, increasing pollution and rampant urban and industrial development are further stressing our freshwater resources. Within the past few years, according to *Threats to Water Availability in Canada*, a report published by Environment Canada in 2004, during the last half of the 1990s, over one-quarter of Canadian municipalities faced threats to the quantity of their water, and many more faced threats to its quality.

“The trouble with water,” as Marq de Villiers explains in his award-winning book *Water*, “is that they’re not making any more of it. They’re not making any less, mind, but no more either.” At the same time our population in Canada is on the rise. As a result, the key to water management lies in shifting the focus from expanding supply (supply management) to moderating demand (demand management through technical fixes such as low-flow shower heads and economic incentives such as volume-based pricing) to a long-term and fundamentally holistic approach dubbed the water soft path.

When viewed on a spectrum and as illustrated in “Planning” on page 13, these three water management approaches – supply management, demand management and the water soft path – are incremental steps on the road toward sustainable water use. However, far from being a simple progression, these options differ in ways described in “Benefits” on page 12.

Since reducing demand appears to be our best “source” of water, demand management needs to become the primary policy focus of water management if sustainability is the objective. In California, studies undertaken by Peter Gleick in 2003 indicate that total urban water use could be cut by 30 per cent using cost-effective, off-the-shelf technologies that can be implemented in less time than it takes to develop a new

An Innovative Framework

THE REALITIES of urban water management in the 21st century demand a much more comprehensive and strategic approach to water conservation and efficiency. We just can’t keep doing the same old thing. The water soft path offers a new perspective on the challenges that are quickly emerging today: new source protection laws, climate chaos, out-of-control urban growth and changing urban landscapes.

The water soft path is an innovative framework and principled planning approach that integrates the many conservation and efficiency tools at our disposal and puts them into a cohesive plan. It moves beyond the technical aspects of water supply-management and efficiency to fundamentally address the complex interactions of strategic planning, community action, and vital aspects of human behaviour that will be needed to develop a lasting water ethic and the long-term thinking that is absolutely critical to a sustainable water future. In this very real sense the water soft path becomes the only option in a world where water is recognized as the foundation of a healthy, wealthy and ecologically secure society. 🌱

– Glen Pleasance
Chair, Water Efficiency Network of the
Canadian Water and Wastewater Association (CWWA)

supply. If these technologies were adopted, California could avoid tapping new sources for three decades.

Harnessing the potential of existing technologies and economic incentives that result in the efficient use of water is a first step toward a more sustainable practice, but it doesn’t go far enough. Indeed, Sandra Postel surmises in an article published in *Natural Resources Forum* (29:2) that water withdrawals already impair nature’s ability to provide ecological services. Water soft

Water Soft Path Principles

- 1 Treat water as a service rather than an end in itself.
- 2 Make ecological sustainability a fundamental criterion.
- 3 Match the quality of water delivered to that needed by the end use.
- 4 Plan from the future back to the present.

Although many Canadians believe that freshwater resources are limitless, the reality is that only a small proportion of our water is both truly renewable and located close to where we live.

paths go beyond efficiency by seeking to change water-use habits and water-management institutions so they lead to long-term ecological and social sustainability.

The soft path approach changes the conception of “water.” Instead of being viewed as an end product, water becomes the means to accomplish specific tasks, such as sanitation or agricultural production. Conventional demand management asks: How can we get more from each drop of water? Water management based on a soft path asks: Why should we use water to do this at all? Why, for example, do we use water to carry away our waste? Demand management recommends use of low-flow toilets, whereas a water soft path promotes the use of waterless or composting toilets, and on-site waste treatment and reuse for larger buildings. The difference in total water savings is considerable according to *The Soft Path for Water in a Nutshell* (FOE, 2006): 80 to 90 per cent for a water soft path versus 30 per cent for demand management as compared with business-as-usual.

By asking the question why, the soft path increases

the potential for saving water. And the approach is not just applicable to houses and gardens; it can also be used in large buildings, factories and farms.

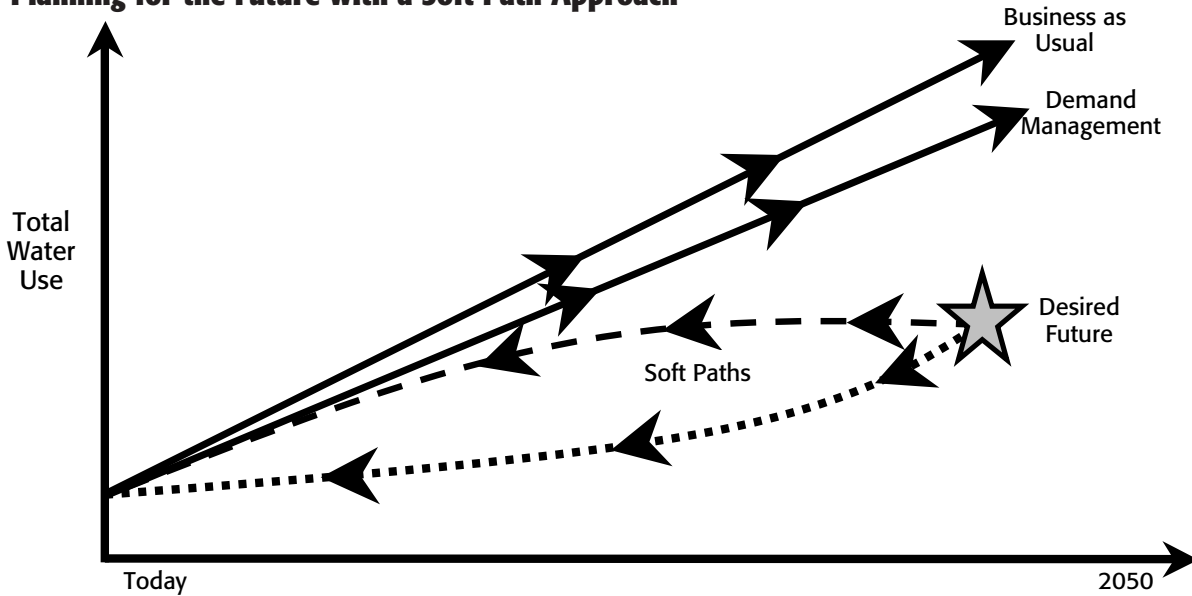
The water soft path has four core principles. It suggests we treat water as a service rather than an end in itself. As such, the services water provides may be replaced by other technologies or techniques. In the case of toilets, composting can replace water. But humans are not the only users of water. As a result, another core principle is that the soft water path incorporates constraints that limit the amount of water humans can withdraw so that shortages don’t disrupt how ecosystems function. One means of accomplishing this is to match the quality of water delivered to what is required. Ideally, wastewater from one task is used by another. For instance, grey-water from a washing machine can be used on a garden.

According to Alan Kay, who is credited with conceiving the laptop computer, “The best way to predict the future is to invent it.” In terms of a water soft path, the best way to reduce our water use is to invent, or at least

Benefits of the Water Soft Path

Policy	Dominant Discipline	Range of Policy Choices	Fundamental Question	Planning Process	Outcome
Supply Management	Engineering	Policies based on presumed need for new infrastructure.	How can we meet projected water needs given current trends in water use and population growth?	Planners extrapolate from current consumption patterns to determine future “requirements” and then locate and develop new sources of supply to meet this projected demand.	Construction of dams, pipelines, canals, wells, desalination systems, and interbasin transfers, where necessary.
Demand Management	Economics	Policies based on short-term cost-benefit calculations.	How can we reduce needs for water to conserve the resource, save money and reduce environmental impacts?	Planners incorporate efficiency and information programs together with improved pricing patterns to maximize use of existing infrastructure. Increasing capacity is only one option among others in a least-cost approach.	Efficiency gains through technical fixes and consumer education.
Soft Path	Multi-disciplinary	Policies based on stakeholder consultation and political review.	How can we deliver services currently provided by water in ways that recognize the need for economic, social and ecological sustainability?	Planners model a sustainable future state for water use with attention to long-term economic and social prosperity. They then “backcast” to devise a feasible and desirable path to reach that state. Ecological sustainability is fundamental to all economic, political and socio-cultural choices.	Options to reduce water use through innovation, conservation, water reallocation and changing patterns of use and re-use. More water is left <i>in situ</i> .

Planning for the Future with a Soft Path Approach



Source: The Soft Path for Water in a Nutshell (FOE, 2006)

Water soft paths are a vision, an analytical method, and a planning tool. The method is designed to explore alternative routes to move from the vision to practical application.

describe the future we want and figure out how to get there from here. Called “backcasting,” this process is another core principle of a water soft path.

Under a water soft path regime, the role of management shifts from building and maintaining water supply infrastructure to providing water services, such as new forms of sanitation, drought-resistant landscapes, urban redesign for conservation, water reuse and recycling, and new methods for rain-fed agriculture.

The water soft path is both a concept and a method. Many people accept it as an ideal that moves us closer to sustainability. However, few people recognize that methods needed to transform the soft path from “eco-dreaming” to practical applications already exist. These methods must be refined, but studies undertaken by Amory Lovins at the Rocky Mountain Institute in the US, who created soft energy paths, demonstrate that experience gained through analysis of alternative energy strategies can be adapted to freshwater.

The recently completed research on water soft paths in Canada, as described in this issue of *Alternatives*, explores what water soft path policies might achieve in

Canada. Feasibility studies undertaken at three scales, on a watershed scale in Nova Scotia, on a provincial scale in Ontario and on an urban scale in British Columbia, illustrate the opportunities and challenges. They are the first set of comprehensive water soft path studies completed anywhere in the world. Rather than being definitive, the results are indicative. However, they demonstrate that the goal of sustainable development for freshwater is within our grasp in Canada. Where there’s a way, oftentimes there’s a will. ♻️

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For further reading, see “Water Resources” on page 28.