

The water soft path - a new approach to ensuring adequate water supplies

By Laura Brandes

The traditional approach to urban water management is being challenged. Population growth, habitat loss, pollution, climate change, and a growing sensibility to sustainability are heralding the emergence of a new model — and a new era — of water management.

Rooted in efficiency, conservation and ecological values, this model, *the water soft path*, strives to move society towards a water-sustainable future. In short, it turns the thousands of years-old, supply-side approach to water management on its head.

The conventional approach to increased water demand has always been to increase water supply. This is known as supply-side management. The increase in supply is traditionally achieved by expanding physical infrastructure through any variety of water collection and channelling techniques: pipes, pumps, dams, reservoirs, wells, cisterns or canals.

Supply-side management has certainly provided huge and undeniable benefits throughout history. It has allowed societies to produce quality drinking water for large populations, substantial irrigation water for farmers, volumes of water for industry, and “recreational” supplies for filling swimming pools, washing cars and gardening. But, in today’s world, the time has come to reconsider this approach. Water supplies are not endless, and planning tools need to start embedding environmental consideration at every level, from water policy and program development to implementation.

Growing up with familiar images of glacial-fed rivers, the Great Lakes, voluminous waterfalls, and Canada’s innumerable northern lakes, it is no wonder that many Canadians tend to have a distorted perception of the state of our natural resources. It is true that Canada is home to a huge amount, nearly 7%, of the world’s renewable fresh water supply, but only a small portion of this water is available for our needs. The bulk flows northward, while the majority of the population lives along the southern border of the country.

With increasing urban populations, regular summer droughts and the uncertainty of climate change, Canada is by no means immune to problems of water scarcity. Environment Canada has stated that one-quarter of Canadian municipalities face ongoing water supply problems. If no changes are made to the conventional approach to water management, further problems, such as shortages, scarcity, and stress, are inevitable.

How can societies ensure the sustainability of their water resources while maintaining economic prosperity and a high quality of life? The challenge lies in shifting our perspective and changing our policies to work toward a sustainable future.

Water demand management and the soft path

One partial solution lies in water demand management. Unlike the supply-side approach of “increased demand-increased supply,” this well-known method reduces demand through cost-effective efficiency measures. Common measures include the installation of devices, such as water-efficient appliances and low-flow taps, showerheads and toilets.

As demand management programs become more detailed and longer in term, they can be reshaped and refined into a more comprehensive water soft path approach.

The water soft path concept emerged in the United States in the 1990s when a number of international water experts began considering water conservation as a holistic concept. The idea is based on the “soft energy path,” a sustainable approach to energy planning developed in the 1970s.

Like demand management, water soft paths strive for efficiency. But efficiency only scratches the surface of what this planning tool offers. The water soft path departs from demand management by challenging our social behaviour: water use habits, technologies and practices. It takes into consideration the complex interactions that occur between the natural environment and human activity. In this way, water soft paths work within ecological limits and also promote community

and citizen involvement in water management.

The key difference between demand management and the water soft path can be explained with two simple questions: how and why? Demand management asks the question, how? How can we carry out a task, for example, toilet-flushing, irrigation or dishwashing, with less water? The water soft path, on the other hand, asks, why? Why are we using water to accomplish these tasks in the first place? Is there another, more sustainable approach?

By asking why, water soft paths are better able to incorporate not only efficiency but also conservation. The soft path approach is also designed to match the quality of water supplied to that required by a specific end use. This allows wastewater from one activity to become the input for another activity. It is a novel idea in our society, where litre upon litre of drinking water is flushed down toilets every day.

To conserve water and match quality, a household might, for example, incorporate a water flow cycle from rainwater capture to the washing machine, or the garden.

Implementing a water soft path strategy

For a community to implement a water soft path strategy, the first step is to have a vision of its desired, sustainable future. Conventional planning starts from the present and extrapolates into the future. Backcasting, a technique central to the soft path approach, does just the opposite.

With backcasting, a community first identifies its desired future of water use and supply, usually looking 20 to 50 years ahead. Then it works backwards to identify policies and programs that will allow the identified future to be successfully achieved. Once this initial framework is in place, decision-makers can revisit the plan every five to 10 years for reassessment.

Backcasting for a sustainable water future has been proposed or adopted in a number of communities across Canada, including Calgary, York Region and

Guelph. In 2006, the Capital Regional District in Victoria moved to include water conservation backcasts to the year 2050 as an element of all future strategic water planning initiatives.

Moving the water soft path from theory to implementation is a core area of focus at the University of Victoria's POLIS Project on Ecological Governance. David B. Brooks, soft path research director, and Oliver M. Brandes, water sustainability project leader, recently authored an article on the water soft path in the *International Journal of Water Resources Development*. This summarizes the first applications of water soft path analytics to specific geographic areas in Canada. It also offers steps to improve recognition of the water soft path as a planning tool, that can move management and policies towards economic, ecological and social sustainability.

The article comes on the heels of *Making the Most of the Water We Have: The Soft Path Approach to Water Management* (Earthscan, 2009), the first book to comprehensively present and apply this approach, both nationally and internationally.

In 2011, the POLIS Water Sustainability Project will be releasing a new water soft path strategy for Fergus/Elora, Ontario. Through its ongoing pilot project program, the organization works with local leaders and governments to develop tailored strategies for Canadian communities. Full-scale strategies have already been developed for Oliver, Salt Spring Island and Abbotsford/Mission, British Columbia. Each report provides detailed background about the community's hydrology, geography and water management and governance to date.

Based on current water use data and future projections, the reports then outline a selection of future water use scenarios. The "no new water" scenario incorporates all the elements of a water soft path.

After the strategies are developed, the challenge is implementation. But the scenarios are designed to be feasible, and communities have shown success. Since the release of the Salt Spring Island report in February 2010, the community has started working towards adopting the "no new water" strategy for the island.

Peeling Back the Pavement: Reinvent-



Water supplies are not endless, and planning tools need to start embedding environmental consideration at every level. Photo courtesy Brad Hornick.

ing Rainwater Management in Canada's Cities, also scheduled for release early in 2011, will be the newest addition to the POLIS handbook series. Developed in partnership with the University of Victoria Environmental Law Centre, *Peeling Back* draws on the water soft path to demonstrate that rainwater is a drastically underutilized piece of the urban water cycle.

The handbook is targeted at local governments and community leaders, who want to take action to reform stormwater governance. It is based on academic and community-based research on the best practices of stormwater management.

Applying elements of the water soft path, it outlines the elements of a modern, "build with nature" approach to rainwater management.

The time has come to challenge the traditional approach to urban water management, and the water soft path offers a viable and exciting alternative. As evidenced by pioneering communities across the country, it is possible and it is happening.

Laura Brandes is with the POLIS Water Sustainability Project. E-mail: communications@polisproject.org