Thinking Beyond the Pipes and Pumps – New report offers solutions to urban water scarcity in Canada

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Water scarcity is the new reality for a growing number of Canadian communities. Just ask anyone from Tofino on BC's "wet coast" where the town was on the verge of closing its doors last September due to a water shortage. Or ask the folks in the Prairies who wonder where their water will come from when the Rocky Mountain glaciers are gone. Even communities in the Great Lakes Basin are facing water limits—with some like Guelph and the Region of Waterloo drawing up plans to plumb big pipes to tap the lakes.

Many regions across the country anticipate hotter and dryer summers as climate change impacts escalate. Communities in the Okanagan Valley, for example, depend heavily on the snow pack and spring runoff to fill their reservoirs. As the climate warms, water supplies will likely be less abundant and less reliable; at the same time, water demands for landscaping, agricultural irrigation and industrial processes will increase. Coupled with population growth and rapid urbanization, climate change has put water in competition with oil as the strategic resource of the century.

Thinking Beyond Pipes and Pumps

A new report from Water Sustainability Project at the University of Victoria's POLIS Project on Ecological Governance offers some possible solutions to urban water scarcity in Canadian communities.

Thinking Beyond Pipes and Pumps: Top 10 Ways Communities Can Save Water and Money profiles innovative alternatives to the current "dam it, pump it and pipe it" approach to water management.

It identifies a new kind of infrastructure—one that goes beyond the existing physical infrastructure of water pipes, pumps and reservoirs to include innovative physical components, such as reuse and recycling and rainwater harvesting, and policies and programs designed specifically for water conservation. The emphasis is on decentralized technologies and on the "social infrastructure" of strategic long-term planning and community-based engagement.

This practical guide is intended to inspire and facilitate action. Based on three years of research by the Water Sustainability team at the POLIS Project, it was created for elected officials, community leaders and water managers. It is alive with examples of successful water conservation initiatives such as the Southeast Kelowna Irrigation District's agricultural metering pilot project, which reduced annual water allotments by 27 per cent and Dockside Green, a new community in Victoria being designed for conservation. By illustrating the potential, *Thinking Beyond* urges communities to take water security to the next step—to look "beyond the pipes and pumps" and develop new ways of managing water that offer opportunities for big savings, of both water and money.

The booklet begins with The POLIS Top 10—a list of immediate opportunities for communities to take action. The list includes standard water saving measures such as metering, volume-based pricing, education and fixture rebates, along with more cutting-edge strategies such as rainwater harvesting, reuse and recycling, community-based social marketing and urban design for water conservation.

The full potential of the Top 10 lies in strategic integration of the many complementary and synergistic options. For example, as water prices increase and volume-based pricing encourages conservation, efficient fixtures, reuse technologies and rainwater harvesting become significantly more cost-effective and desirable. So, while specifics may vary from place to place, the general concepts of each strategy can be integrated to create an effective water

The POLIS Top 10

10. Fix the leaks & reduce waste by detecting and repairing leaks through integrated water audit and maintenance programs.

9. Stop flushing the future by installing efficient toilets, faucets and showerheads and water-saving dishwashers and washing machines that provide the same water services using less water (and energy).

8. Make managing demand part of daily business by implementing ongoing water conservation programs and hiring permanent staff with technical skills and understanding in fields such as economics, psychology and education.

7. Link conservation to development by making water infrastructure funding and development permits contingent on demand management planning and action.

6. Price it right by implementing "full cost" prices with volume-based pricing structures that ensure equitable access and that reflect the importance and value of water.

5. Plan for sustainability by initiating strategic water planning that looks 10 to 50 years into a community's future, involves all stakeholders, and places ecological health at its core.

4. Look to the sky for rainwater as the source by promoting decentralized infrastructure to harvest rainfall and by creating outdoor (Xeriscaped) spaces that rely primarily on precipitation for irrigation.

3. Reclaim, reuse and recycle water to better match water quality to end uses.

2. Design communities for conservation with water sensitive urban design—limiting sprawling lawns, promoting "green" infrastructure, and requiring all land use decisions to be assessed for watershed impacts.

1. Educate, educate, educate by implementing outreach and education programs that go beyond information dissemination to engage and inspire citizens to permanently change behaviour.

See *Thinking Beyond Pipes and Pumps* at www.waterdsm.org for more details.

conservation program for just about any community.

Comprehensive and long-term water conservation programs are the new water infrastructure; they are the best option for meeting growing water demands. These programs, built around innovative efficiency-based technologies, pricing that promotes conservation, interactive education and engaged citizens, are the foundation of 21st century urban water management.

This does not mean doing without. Instead it is about taking a long-term approach with a focus on holistic water resource management and a water ethic that permeates all of what we do—from decisions to water our lawns (or have lawns at all) to the local councillor deciding how our community will grow in the face of a very real, and limited, water budget.

Not only is this approach better for the environment, it is cheaper in the long run—and in this way becomes the only sustainable option.

ABOUT POLIS and WSP

Oliver M Brandes, Tony Maas and Ellen Reynolds work at the Water Sustainability Project at the POLIS Project on Ecological Governance at the University of Victoria and have authored the report *Thinking Beyond Pipes and Pumps: Top 10 Ways Communities Can Save Water and Money*. Available at: www.waterdsm.org. Contact POLIS at polis@uvic.ca for copies of the booklet.

The POLIS Project on Ecological Governance is a research-based organization at the University of Victoria in BC. Among the many research centres investigating and promoting sustainability worldwide, POLIS represents a unique blend of multidisciplinary academic research and community action. <www.polis-project.org> The Water Sustainability Project was created in January 2003. <www.waterdsm.org>.