Moving Toward a Soft Path? A Case Study of Guelph, Ontario

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The report *Moving Towards a Soft Path? A Case Study of Guelph, Ontario* provides an overview of water quantity issues related to urban growth in the Greater Golden Horseshoe Region (GGH). The GGH region is currently one of the fastest growing regions in North America. Growth in the GGH region thus far has largely been characterized by resource intensive urban sprawl. The Province of Ontario passed legislation for a regional growth management plan, the *Growth Plan for the Greater Golden Horseshoe*, in 2006 (*Growth Plan*) in an attempt to reorient the nature of development across the region. To some extent, the *Growth Plan* combines the often contradictory goals of balancing environmental conservation and substantial residential and commercial growth.

Conservation as a Means to Accommodate New Growth

A third of Canada's population lives in highly urban watersheds and sixty-five percent of these residents reside in Ontario (Rothwell, 2006). Furthermore, over six million of these residents are located in a single watershed spanning the Greater Toronto Area, the GGH and the Niagara Peninsula (Rothwell, 2006).

Some municipalities designated to grow within the Growth Plan, especially those reliant on groundwater, are considering large water infrastructure projects such as pipelines to the Great Lakes, or expansion of existing water infrastructure to meet future demand. While infrastructure expansions may be unavoidable in some cases, conservation and efficiency should also be equally considered as a source of "new infrastructure" during this high growth period in the GGH region.

The Need for Conservation at the Municipal Scale in the GGH Region

The most urbanized municipalities of the Grand River Watershed, particularly Kitchener, Waterloo, Cambridge, and Guelph are among the fastest growing cities in Canada (Grand River Conservation Authority, 2005). The Waterloo region has been identified as one of the main drivers of the Ontario economy (Grand River Conservation Authority, 2007). Populations of the urban municipalities of the Grand River Watershed are anticipated to increase by 57 percent by 2031 (Grand River Conservation Authority, 2005).

Consultants who examined the potential impact of the *Growth Plan* on Dufferin County noted that, given the area's current assimilative capacity for sewage (comprised largely of headwaters streams), only a population increase of 13,000 would be feasible unless additional capacity is developed (Weston Consulting, 2006). The most urbanized

municipalities in Dufferin County: Orangeville, Shelburne, and East Luther Grand Valley are currently working to expand their sewage treatment capacities. However, in Dufferin County's largest towns, Orangeville and Shelburne, the current expansions underway will not be sufficient to accommodate long-term growth expectations (Dillon Consulting et al., 2009). Mulvihill (2006) suggests that planning decisions made in the town of Orangeville will hold significance for the greater bioregion. Others have noted that currently, smaller rural municipalities in the Grand and Credit River watersheds facing growth pressures may not have sufficient funds to implement water conservation and efficiency strategies (pers comm, 2009).

Growth pressures in Simcoe County following the passing of the *Greenbelt Plan* in 2005 have also been well documented. In June 2009, the Ontario Ministry of the Environment completed the Lake Simcoe Protection Plan. The plan is intended to protect the Lake Simcoe watershed from ongoing development pressures, and contains measures to protect both water quantity and water quality. The plan requires the largest municipalities in the watershed to develop water conservation and efficiency strategies. However, specific requirements for the conservation plans are lacking. The Plan does require that municipal conservation strategies have specific targets and timeframes, but does not provide benchmarks or deadlines for completion of the plans. In addition, conservation and efficiency strategies are not required to be initiated until five years after the passing of the plan (Ontario Ministry of the Environment, 2009).

While the *Growth Plan* states that construction or expansion of water and wastewater systems is to be precluded by water demand management and considered in the context of the Great Lakes Basin Agreements, it is too early to determine whether these agreements, or the *Growth Plan* itself, will be sufficient to prevent unnecessary water infrastructure projects that could be avoided through aggressive water conservation and efficiency planning.

Case Study: Guelph, Ontario

Guelph is a mid-sized city in Wellington County, located in the Southwestern portion of the GGH region. With a population of 115,000, Guelph is currently one of the largest cities to rely almost entirely on groundwater and is also one of the fastest growing cities in Canada (City of Guelph, 2009).

Guelph's recent efforts to develop a long term planning strategy that relies heavily on water conservation and efficiency has been described as a potential pilot project for the soft path that could have wider relevance to the other municipalities facing similar conditions (Etienne, 2008). For this reason, Guelph was examined over the course of several months as the city prepared its 2009 water conservation and efficiency strategy and negotiated with the provincial government to reduce its growth target under the *Growth Plan* to reflect the assimilative capacity of the Speed River.

Key findings

Awareness and appreciation for ecological limits among a significant portion of the population in Guelph, as well as an active local non-profit sector were found to be critical factors in the city's emergence as a recent leader in water conservation. In addition, the presence of municipal staff members who hold a preference for maintaining growth within the city's current carrying capacity allowed for the translation of public concerns into an effective local policy framework for sustainable long term growth. Specific measures adopted by the city include the deferral and possible elimination of a pipeline to Lake Erie to support future growth, pilot projects that attempt to match water quality to the type of service required such as rainwater and wastewater recycling, and the revision of long term growth forecasts to reflect the local availability of water supplies and assimilative capacity for wastewater.

Findings of the Guelph Case Study in Broader Context: Lessons Learned

The ability of largely volunteer-led citizen groups to influence Guelph's long-term planning approach is a testament to the need to foster civic engagement more broadly in the GGH region, as well as the need to transform individual perceptions regarding the water "myth of abundance" on a broader scale.

Although the measures identified as consistent with the soft path in Guelph's long term planning strategy make use of existing technologies, it remains among the more innovative and aggressive conservation strategies in Ontario, with experts recently identifying the city as a leader in the field (Maas, 2009). It appears that the somewhat unique conditions created by the level of awareness of environmental issues in the community, as well as practitioner's willingness and capacity to respond to local pressure to live within ecological limits played a major role in shaping the city's long term planning process. The subsequent strategies outlining growth management, water supply, wastewater management and water conservation can be traced back to the broad community goals established by the most recent council, in part voted in because of their stronger environmental focus than the previous council, who supported a pipeline based water supply.

In addition, technological solutions to conserving water are dependent on a human commitment to conservation. Campbell et al. (2004) identify "offsetting behavior" as a barrier to the long term success of water efficiency measures. Offsetting behavior occurs when engineering or educational measures to conserve resources do not perform to their expected capacity due to end user's increasing consumption levels. End users may increase their consumption based on the knowledge that conserving technologies are in place. Consumption levels have also been found to be higher when

users are unaware that conserving technologies have been installed (Campbell et al, 2004).

There is strong evidence to suggest that significantly higher conservation and efficiency savings are technically feasible on a provincial scale. Brooks (2009) notes that in an "aggressive" water conservation scenario, meaning 50 percent of the total possible participants are participating in conservation and efficiency programs, the savings realized would account for 10 percent of total water demand in Ontario. The fact the most optimistic scenarios are based on a 50 percent participation rate suggest that an increased effort on fostering education, awareness and engagement could result in even higher demand reductions.

Lack of motivation and awareness may be a barrier elsewhere in Ontario and more broadly at the national level. Recent survey based research has demonstrated that attitudes toward freshwater resources are highly nuanced and vary considerably between demographic groups. Despite a general sense that freshwater resources should be a top priority in comparison to other environmental issues, there are significant gaps between perceptions and reality. Recent surveys identified a paradox in which concern for water resources and peoples perceived water use contradict actual water consumption levels. On average, Canadians surveyed believed that their use was in the range of 60 litres of water per day, when in fact actual per capita consumption levels exceed 300 litres per day (Unilever and RBC, 2009). The survey results also reveal that many Canadians believe water conservation is poorly implemented by corporations or by 'others' in general, while comparatively, they perceive their own actions as positive (Unilever and RBC, 2009).

When considered in the of the above findings, the city of Guelph's relative level of awareness by comparison may at least partially explain why the city's water management and general long term planning approach is more consistently focused on ecological sustainability, while others continue to pursue an infrastructure based strategy. These findings also highlight the ongoing need to bridge the gap between the perceived importance of public education programs in encouraging water conservation among municipal policy makers, and the extent to which such programs are funded and implemented in Ontario that has been identified in recent research.

Furlong (2008) Conducted an extensive survey of water related organizations in Ontario, which included municipal water staff, conservation authorities, environmental non-profits and governmental departments dealing with water supply. The survey was intended to generate an overview of key water issues from the perspective of various groups across the province. The survey results indicated that there is a gap between the extent that public education and public participation programs are implemented and the number of respondents that view them as the one of the most effective measures to improve environmental sustainability in the water sector (Furlong, 2008). Furlong suggests that the neoliberalization of governance in Ontario has inhibited the advancement of public education in comparison to other water conservation and

efficiency initiatives for which results may be easier to measure. During a follow up workshop to the survey, experts noted that as municipalities have increasingly been asked to operate like businesses; educational programs where results cannot be quantified are more challenging to justify (Furlong, 2008).

The findings summarized above stand in contrast to recent research conducted in Guelph of similar nature. As a component of the background research leading up to the 2009 water conservation and efficiency strategy, consultants hired by Guelph conducted telephone surveys and a focus group session to gauge the level of awareness and concern for water issues in the city. The study found that when residents were asked what came to mind when they thought about environmental issues in Guelph, water was mentioned more than twice as often as energy and waste (Metroline Research, 2008). While similar levels of concern over water were noted at a national level in other surveys, residents in

Guelph appears to be translating their concern into action. Water use has been consistently declining in Guelph over the last decade. Participants in the survey also demonstrated a strong sense of responsibility for conserving water above and beyond the ability to save money. When asked why water issues were the subject of increased concern in the city, the majority of respondents identified the city's finite groundwater supplies as a key reason (Oracle Poll Research, 2008).

Recommendations:

1) Provincial:

• When forecasts contained in the *Growth Plan for the Greater Golden Horseshoe* are subjected to a five year review, growth targets in any of the affected municipalities where water and wastewater limitations exist should be revisited and reduced wherever possible.
• The province should also adopt a model similar to the assured water supply laws used in the United States to reduce or prevent growth where proof of sufficient water resources cannot be provided by developers.
• As a component of the upcoming conservation and efficiency strategy, the province should provide financial support grassroots groups, municipal professionals and schools to aid in fostering the creation conservation and efficiency efforts tailored to the specific needs of communities across the province that can also be sustained over the long term.

2) Municipal Level: A

• The full report recommends that a significant effort should be made to create and expand campaigns and initiatives to raise awareness and education at all levels, ranging from municipal professionals to young children. While the actual savings are

challenging to quantify, making investing in these measures a harder sell, the Guelph case study provides additional evidence that an aware and engaged community is crucial to municipal level adoption of a holistic and sustainable water management strategy. The provincial government should explore avenues to support municipalities in expanding education and awareness programs, as well as make further efforts to incorporate water conservation principles into the Ontario curriculum.

References

Brooks, M. (2009). *Assessing the Potential for Water Conservation and Efficiency in Ontario: Final Report.* Ontario Ministry of the Environment. Resource Management Strategies Inc.

Campbell, H. E., Johnson, R. M., & Larsen, E. H. (2004). Prices, Devices, People, or Rules: The Relative Effectiveness of Policy Instruments in Water Conservation. *Review of Policy Research* , 637-662.

City of Guelph and Oracle Poll Research. (2008). *City of Guelph - Water Conservation and Efficiency Residential Phone Research Survey.* Guelph, Ontario.

Etienne, J. (2008). A 'Soft Path' for Water: Integrated Approaches to Water Demand Management in the Grand River Watershed. Federation of Canadian Municipalities.
Furlong, K. (2008). Municipal Water Supply Governance in Ontario: Neoliberalization, Utility Restructuring and Infrastructure Management. University of British Columbia.
Grand River Conservation Authority. (2005). Grappling With Growth. *2005 Watershed Report*.

Maas, C. (2009). *A Blueprint for a Comprehensive Water Conservation Strategy.* The Polis Project on Ecological Governance.

Metroline Research Group. (May, 2008). *Water Efficiency: A Quantitative Market Research Study With Randomly Selected Residents of Guelph.* City of Guelph.

Mulvihill, P. (2006). Fostering Sustainability in Headwaters County: Using Bioregional and Social Capital Strategies in Support of Sustainability. *Local Environment* , 663-682.

RBC and Unilever Canada. (2009). *2009 Canadian Water Attitudes Survey.* RBC and Unilever Canada.

Rothwell, N. (2006). Study: The population pattern in Canada's watersheds. *Statistics Canada: The Daily* .

Weston Consulting Group Inc. (2005). Re: "Places to Grow" Proposed Growth Plan for the Greater Golden Horseshoe - Response to the Minister of Infrastructure Renewal.