Niagara Raw Water for Irrigation Project
Phase 2

Technical Memorandum

Assessment of the Policy and Regulatory Aspects of the Preferred Servicing Solutions

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1.0 Introduction

Task No. 4 Technical Memorandum entitled Regulatory Requirements and Related Considerations prepared in the early stages of the Phase 2 Study identified the broad range of policy issues and regulatory requirements that would apply to the development of new or expanded irrigation systems to service the study area. Challenges were discussed with respect to the choice of water sources, the magnitude of projected water takings and the application of conservation practices. Servicing solutions that could trigger provincial and binational commitments and concerns pertaining to the shared use and management of Great Lakes waters were highlighted as situations where negotiation of regulatory and other approvals could be complex and prolonged.

With the narrowing down of the preferred sourcing alternatives and technical servicing options it is now possible to more clearly identify and prioritize the key regulatory issues to be addressed in moving toward project design and implementation. These are discussed first in overview and then in the context of the individual irrigation districts.

2.0 General Observations on Source Selection

The magnitude and timing of irrigation demands at a district wide scale are such that the source water bodies must have the capacity to meet these demands on a seasonally sustainable and longer-term basis without causing interference with other water users and adverse impacts to aquatic systems. This favours the choice of large waterbodies or watercourses such as Lake Ontario, Niagara River or Welland Canal over local streams such as 4-Mile 15-Mile and 20-Mile Creeks and groundwater aquifers of limited and annually uncertain supply potential.

Other key factors in source selection are the regulatory processes and risks associated with transferring water between lake basins and the existence of water sharing agreements that could preclude or complicate development of a new irrigation taking. The 1950 Niagara Treaty, which allocates the waters exiting Lake Erie via the Niagara River, Welland Canal and power canals, contains provisions that constrain access beyond what has been predetermined and prescribed. Access for irrigation purposes would have to be negotiated and could involve the payment of compensation to power generation interests.

3.0 Water Conservation and Water Use Efficiency

Ongoing changes in provincial legislation and policy directives heighten expectations on all water users to develop and implement water conservation plans. Current requirements are not prescriptive in terms of water use efficiencies (litres per unit of production) but do emphasize adoption of technical and non-technical measures and best practices representing what is achievable within individual water use sectors. The availability and demonstrated viability of drip and water efficient irrigation technologies for grape and tender fruit production is likely to increase government expectations that their expanded use be investigated as part of any district irrigation proposal arising out of this study.

While the details of conservation objectives, targets and rules are still being worked out among Great Lakes Basin jurisdictions the expectations are clear that new water resource development projects involving large scale takings will face increasing scrutiny. Project proponents will have to justify the amount of water taking, submit a conservation practices plan and demonstrate that other uses and basin ecosystem health will not be adversely impacted.

4.0 Consumptive Use and the Great Lakes Charter

Ontario a signatory to agreements that commit it to manage development and use of Great Lakes Basin water resources in partnership with the Province of Quebec and the eight Great Lakes States. The Great Lakes Charter of 1985 and the Great Lakes St Lawrence River Basin Sustainable Water Resources Agreement – 2005 (SWRA) establish shared goals, principles, objectives and mechanisms for managing new water takings. They require interjurisdictional consultation around larger projects before approvals can be granted.

The full district-level irrigation schemes identified through this study are of a magnitude that would trigger consultation requirements relating to consumptive use. Consumptive use is defined as – *that portion of water withdrawn or withheld from the Basin that is lost or otherwise not returned to the Basin due to evaporation, incorporation into products or other processes*. Projects involving consumptive usage in excess of 19 million litres per day (ML/d) are subject to all party review and must meet a series of tests relating to the justification of need, alternatives considered, application of conservation measures and the mitigation of impacts on other uses and basin resources.

Regulations under development by the Ministry of Environment will more specifically describe where and how the consumptive use provisions of the SWRA are to be applied. The first implementing regulations are expected to be in place sometime in 2008. In the interim, provincial representatives have indicated that projects involving a consumptive use in excess of 19 ML/d based on a 30-day average must be brought before the other parties for review and comment. Based on current interpretations agricultural water takings for crop irrigation are considered to be 80% consumptive. Any new or expanded irrigation water withdrawal in excess of 23.75 ML/d would therefore trigger the consultation and review requirements.

5.0 West District Zone A

The preferred servicing alternative identified as Alternative W1 comprises a single intake drawing water directly from Lake Ontario or from Jordan Harbour together with an all-piped distribution system. Two lake-based options were identified. The projected design capacity to meet demand requirements was determined to be 147.4 ML/d.

The Lake Ontario intake options (Sann Road and 5th Street Louth) offer less regulatory complexity than the Jordan Harbour alternative. The latter entails construction disturbances within a Provincially Significant Wetland (PSW) and is, therefore, subject to additional approvals and greater scrutiny over the prevention and mitigation of adverse impacts to both aquatic and riparian plant and animal communities. Waters sourced from Jordan Harbour are more likely to be of lesser quality (e.g. more turbid) than those sourced from the lake.

At this stage it is not clear whether one lake-based intake option has any regulatory advantage over the other. This will require examination of localized conditions relating to fish habitat and the likelihood of potential interference with navigation and other uses.

The choice of a fully piped conveyance or distribution system is likely to be viewed with greater acceptance by provincial regulatory authorities since the overall water taking is reduced by the amount needed to compensate for evaporative and other losses that would occur in an open channel system. Piped supplies also offer the advantages of more consistent water quality and pressurization.

6.0 East District (NOTL)

The preferred servicing alternative for the East District (Alternative E3) represents an extension to and upgrade of the existing open channel distribution system. Existing water supplies would be supplemented by expanded takings using two existing intakes and one new intake. Relocation (without expansion) of a 4th intake is also recommended. The system would have the capacity to meet an additional water demand of 118.6 ML/d.

Source waters included as part of the expansion and upgrade plan include the Welland Canal (new Lock 3 Intake and relocated Eastchester Pumping Station), the Niagara River (expansion to the Queenston Pumping Station) and the OPG Power Canal.

As pointed out in the previous regulatory issues review most sourcing options for the NOTL area involve negotiation complexities linked to binational and domestic agreements that govern the shared use of water for power generation and navigation purposes. Access to additional waters from the Welland Canal and the OPG Power Canal will require negotiations with OPG and the St Lawrence Seaway Management Authority and the participation of a number of provincial and federal agencies. Expansion of the Queenston Pumping Station is likely to involve fewer issues and concerns since it draws water from the lower Niagara River.

The significant capital cost advantages in utilizing and extending the existing NOTL open channel conveyance system led to its selection as the preferred method for distributing water to growers. In moving forward project proponents will have to address the previously identified concerns surrounding environmental sustainability and service levels of such a system.

7.0 Other Considerations

Other permits and approvals under the *Fisheries Act*, *Navigable Waters Protection Act*, *Conservation Authorities Act*, *Public Lands Act* and other legislation will also apply and will need to be examined as part of detailed project design. While these need not be pursued at this stage it may be helpful to keep the responsible agencies informed of project planning along the way.

8.0 Conclusions and Next Steps

The most significant regulatory challenge in moving forward with a project at the scale considered through this study is success in applying for and obtaining the Permit(s) to Take Water issued under the *Ontario Water Resources Act*. This involves addressing relevant requirements arising out of Ontario's Great Lakes Charter commitments as highlighted in Section 4.0 above. As some details of those requirements are still to be determined there may be room to proceed with a smaller or pilot scale initiative designed to meet a more localized irrigation need while keeping the scope of the proposed water taking below 23.75 ML/d. Such a project could establish the proponent's commitment to implement district-based irrigation in a manner that meets the water resource sustainability directions of the Charter while avoiding the complexities associated with interjurisdictional consultation.

At the point where there is demonstrated local support to proceed on a pilot project or full scale basis, it will be important to engage the Province in discussions around the origins and rationale for the development of district level irrigation systems and around senior government financial supports needed to make it happen. The connections to sustaining agricultural industry viability, the challenges of meeting water demands in dry years, the realities of global competition, the

impacts on growers of the Greenbelt Plan and other provincial policies need to be clearly spelled out. From the regulatory perspective, the Province should be asked to work with local proponents in addressing the evolving Great Lakes Charter requirements. The Province has an important role to play in facilitating consultation processes and assisting in the pursuit of related sign-offs and approvals.

As an immediate first step it is recommended that local grower representatives along with municipal officials meet with MOE, MNR, OMAF and other ministries to emphasize the need for flexibility, equity and practicality in the designing the regulatory regime being implemented under provisions of the Sustaining and Safeguarding Ontario's Water Resources Act, 2007. Those regulations should work to support the transition to district level irrigations systems where it can be demonstrated that this transition is good for the growers, the regulating agencies and the environment. They should reflect the seasonal and year-to-year variability in crop irrigation needs and the shared benefits of moving away from individual takings that deny access to many growers, put pressure on more limited water sources and place a large administrative burden on regulatory agencies and growers. Since the Province has signaled its intention to proceed with finalizing and promulgating the regulations in the coming months it is important that the Niagara grape and tender fruit industry move quickly to register their concerns and provide input.