Comments on:

Stewardship – Leadership – Accountability
Managing Ontario's Water Resources
for Future Generations
EBR # 010-6350

to the

Ontario Ministry of the Environment
Land and Water Policy Branch
October 3rd, 2009

By the

Ontario Council
Canadian Federation of University Women

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RE: Proposal Paper:

Stewardship - Leadership - Accountability
Safeguarding Ontario's Water Resources for Future Generations.
EBR # 010-6350

The Canadian Federation of University Women (CFUW) Ontario Council appreciates the opportunity to comment on the Proposal Paper **Stewardship - Leadership - Accountability: Safeguarding Ontario's Water Resources for Future Generations.**

We commend the priority this Paper places on the water resources in the Great Lakes Basin and the determination of the government of Ontario to act as stewards of these resources, to maintain the integrity of the waters of the Great Lakes Basin, and to protect the human and ecological health of the Great Lakes Basin for present and future generations.

We learn much about this from the wisdom of our First Nations communities who ask that every decision we make be considered for the impact it will have on the lives of the seventh generation. As the Haida proverb states: "We do not inherit the earth from our ancestors, we borrow it from our children".

CFUW Ontario Council has participated as a member of the Great Lakes Annex Advisory Panel since the Panel's beginning in 2006. We were part of the discussions as the Annex Agreement was debated and signed, and as the *Safeguarding and Sustaining Ontario's Waters Act*, *2007* (SSOWA) was developed and passed. CFUW Ontario Council is therefore very interested in supporting the present process to assure that the final regulations to implement the SSOWA remain true to the spirit and the vision of the Annex.

CFUW Ontario Council recognizes and commends the leadership role that the government of Ontario has taken over the past years, both federally and internationally, in trying to safeguard the water resources of the Great Lakes.

CFUW has, over many years, developed a body of policy which impact on Water, addressing such issues as the Export of Bulk Water, Prohibition of Inter-basin Diversions, the Status of Water under NAFTA, Drinking Water Standards, Marine Development, Water Pollution, Preservation of Wetlands, Acid Rain, Resource Depletion and Safe Waste Disposal. (Some pertinent CFUW policies on water appended, Appendix B)

The 6,000 members of CFUW Ontario Council in 58 communities in all the regions of Ontario (Appended, Appendix C) have made Water and all policies surrounding this life-sustaining resource an important priority.

PART 1: WATER CONSERVATION AND EFFICIENCY

In 2001, CFUW established a policy that:

- declared that water, being a non-renewable natural resource of paramount importance, belongs to the…public and its use must be regulated in the public interest;
- requested that government adopt and implement a sustainable and prudent water management policy to respond to long-term regional needs with due regard to the ecosystem and hydro-geological reality; and
- requested that government promote conservation and more efficient use of surface water and groundwater.

CFUW Ontario Council commends the Government of Ontario for making Water Conservation and Efficiency initiatives a key part of the SSOWA implementation.

As signatories to H2Ontario, we are very aware of the urgent need for effective new conservation strategies to ensure sustainability of our water resources for future generations, to preserve our fragile ecosystems, and to combat the "myth of abundance" and the high level of per capita water usage and water wastage in our province.

CFUW Ontario Council commends the work done by Carol Salisbury (MOE) and her staff in researching Best Practice in Conservation and Efficiency standards in the province, across Canada and in the international community, as listed in Table 2 (pp. 50-54) of the Proposal Paper. It is important that the benefits of these measures have been linked with reductions in energy costs and the cost of infrastructure, with development of new industry and technologies through research and innovation, as well as with the benefits to the environment and the ecosystem of the Basin.

RECOMMENDATION:

That the information on the costs of inefficiency and the savings and economic benefits of the Water Conservation Strategy be made a part of the education and awareness campaign developed for Ontario.

Proposed Guiding Principles:

The five guiding principles are an excellent way to focus the objectives and actions of the strategy. We are very supportive of the role they would play in articulating the strategy's values. They should be made as strong and comprehensive a view as possible, and to that end we would suggest some additional wording.

RECOMMENDATION:

That the first three Principles be amended to read:

- **Create a culture of water conservation and wise use of Ontario's water resources in which all water users understand they have a role to play - residents, agriculture, business & industry and government.**
- **Increase Ontarians' awareness of the finite supply of water, and of the importance and value of water in sustaining all life.**
- **Build on the foundation of Ontario's laws, programs and policies that are already in place, and on Aboriginal traditional knowledge and practices, to promote …..**

Proposed Mission Statement:

A Mission Statement is an excellent focus. It should be a rallying cry - short - easy to remember - engendering pride and pointing to success. The proposed mission statement unfortunately does not meet that standard. Instead it reads like a stern order from above: "use only the water we need" and uses too many words with too many syllables to get its message across.

RECOMMENDATION:

That a new mission statement be created.

Proposed Objectives:

The objectives proposed in the Paper, in order to be effective, must be clearly expressed in strong action-oriented language. The use of "motherhood" verbs, such as "encourage" "promote" "seek opportunities" "consider" "include" can be easily ignored once the province's initial focus on Conservation has moved on.

If all sectors of the province are to believe that Ontario is indeed serious about taking a leadership role in Conservation and in bringing about a change in current practices of water usage, then care will have to be taken in the strength of the language used to bring about that change in attitude and practice.

Some objectives are more effective in this way than others. For example, consider Strategy 1A "Use adaptive programs that are goal-based, accountable and measurable over time." The language here is excellent - clear and specific.

But, for example, in Strategy 2E, "**Include** water conservation and efficiency in the review of proposed new or increased uses;" the language used is weak and indeterminate - the requirement for serious action can therefore easily be sidestepped by those reluctant to change. This strategy needs to be rewritten using much stronger, action-oriented wording: "**Require** water conservation and efficiency **reports to be submitted** as part of the review …"

Similarly in Strategy 3B, the indefinite wording of "**Encourage** measures to monitor …" needs to be rewritten in much stronger language, such as: "**Implement** measures to monitor …"

RECOMMENDATION:

That all the Strategy Objectives be reviewed and where appropriate rewritten using more prescriptive, action-oriented language.

Target Setting:

CFUW Ontario Council agrees with the proposal of setting Targets for water conservation and efficiency.

In fact, we would suggest that Target-setting is an exciting and a vital component of the Conservation Strategy as a whole, and also of the Education strategy objective.

If there is no target established, how can the success of the Strategy be measured? How will individual water users - be they residents, farmers, municipalities, or industry - know where they fit on the spectrum of water use in their sector and whether they are doing their part to conserve and use water efficiently? How will the province get a sense of momentum that will encourage individuals to celebrate their successes and continue their efforts?

The Provincial target should reflect a challenging but reachable goal based on the experience of Best Practice in other jurisdictions. It should be graduated in five year increments so that the expectations increase and targets are raised toward a specific date - say 2025.

There will also need to be a **watershed target** set in highly stressed and highly populated watersheds to ensure sustainable water usage. **This target should be linked with the individual Water Budget set for the watersheds by the Drinking Water Source Protection Committees under the Clean Water Act.**

All individual water users - including Municipalities, high volume users, and PTTW holders should have targets set for both water usage and water wastage. Sector and sub-sector targets would be set based on best practice. The targets must apply to everyone in the sector - to ensure a level playing field. It will be vital to credit individual users within the sector for the work that has already been done and the investments that have already been made towards increased water conservation and efficiency. More should be expected from all users within that sector who have not yet made any substantial efforts at improvement.

Again, a higher target for conservation and efficiency would need to be set for those individual users located in stressed watersheds. This would assist in effecting conservation & efficiency improvements where they are needed most. It would not only help to keep demands on the stressed watershed within its water budget, but would also encourage new industry and development to consider the availability of water resources before locating a new facility.

CFUW Ontario Council also recommends that individual households be given targets. These targets could be incorporated as part of the monthly water bill to show how their water usage as an individual household compares with provincial household average usage - the provincial target - and perhaps even the European average for residential water use.

RECOMMENDATION:

That Water Use Targets be set on a provincial, sectoral and individual basis level to educate and motivate individual and corporate users and to monitor the success of the Conservation and Efficiency Strategy.

Possible Actions:

CFUW Ontario Council commends the government for the list of possible actions to support and monitor advances in water conservation and efficiency throughout the province. It is far-ranging and innovative. Once again we would urge the government to continue to use action oriented words, and to ensure that all actions are goal-oriented and SMART.

Recognizing that not all of the important and necessary changes will, in fact, result in monetary savings, be self financing or cost-neutral for individual stakeholders, it is

important under **Strategy 2D** to **identify** the initiatives that are cost effective - but not to **limit** the "technical measures" to those that are "self-financing".

Implementation and monitoring of the actions will span several years. Some of the proposed actions listed could be done immediately, some will be part of the long term vision, and others will begin now and continue to develop through many years.

It is important to choose some actions from each sector that will be relatively easy and inexpensive to implement and yet will have some measurable impact. These should be implemented first - and quickly, within the first year - building a sense of momentum and accomplishment to enhance the public focus.

Some of these could include:

- Begin Public Awareness Campaign
- Update Building Code & water efficiency standards (e.g. toilets)
- Compile and share Best Practice in water use by sector and sub-sector
- Establish methodologies for better monitoring
- Adopt a Water Sense program
- Redesign Water Bills including standard Water Consumption information, Inclining Block Rates, and Sector-specific Target information
- Require Municipalities to report on water loss
- Require Water Conservation Plans and Water Usage Audit Reports for new, increased and renewed PTTW's
- Enhance Support for Children's Water Festivals

There would be important strategies that might take a little longer to fund and implement. These strategies should be mandated as quickly as possible within 1 to 3 years after the regulation is passed.

Initiatives such as:

- Require Water conservation and efficiency plans and water use audits within all sectors
- Add water efficiency as part of the programs that address energy efficiency
- Set sector-specific benchmarks and targets, monitoring and reporting standards
- Require leaks to be fixed before funding grants for new infrastructure projects
- Require Water Conservation Plans and Water Usage Audit Reports as a condition for any provincial funding
- Establish training & certification programs where they do not already exist for water professionals in all fields
- Require Metering of all municipal residences and multi-unit buildings
- Enhance school curriculum

And there are vital initiatives that will be long-term and ongoing in their implementation, funding and impact, such as:

- Support research in new technologies
- Facilitate sector-specific training for Best Practice and require incremental growth toward achieving Best Practice standards

RECOMMENDATION:

That a Conservation and Efficiency Action Plan be established based on the entire menu of possible actions (Table 2) - with multi-year, action-oriented, measurable goals and changes that will be accomplished through regulation and education and an ongoing commitment of government support.

PART 2: MANAGING NEW OR INCREASED INTRA-BASIN TRANSFERS

1. Defining the Great Lakes Watersheds

CFUW Ontario Councils disagrees fundamentally with the government proposal to redefine a watershed in "a new Regulation stating that a connecting channel be considered part of both the upstream and downstream watersheds for the purpose of identifying new or increased intra-basin transfers."

CFUW Ontario Council spoke out strongly against this proposal at the consultations in Toronto, Kingston and London. We prepared and submitted a formal argument as to why this unscientific definition should not be considered or allowed by the government as part of Ontario law. (See attached -Appendix A)

This redefinition of watershed runs counter to the hydrology of the Basin's watersheds. By accepting it, the government would set a precedent which would allow new and increased intra-basin transfers to take place with impunity.

And what is most frightening, it proposes to use the language of the law to misspeak the truth - to cloak and distort what is actually happening. Because, what is actually happening is an intra-basin transfer which fails to meet the Exception Criterion for Return Flow.

The Ministry representative who presented the Proposal at the Consultation in London admitted that the definition "was definitely not based on hydrology" but stated that we "can use it because it's in the Annex."

Article 207 of the Great Lakes St. Lawrence River Basin Sustainable Water Resources Agreement (Annex Agreement) which contains the redefinition of watershed with both connecting channels is an Article which refers specifically to **WATER-TAKING**. By redefining watershed in that context, it indicates that when taking water out of a connecting channel, one must consider whether there are effects that that water-taking would have on either the upstream or downstream lakes. It is important to note, however, that the redefinition of watershed to include both connecting channels is never mentioned anywhere in the Articles dealing with Return Flow. Thus to extrapolate from Article #207 that one can redefine watershed to include both channels in terms of being

an eligible **recipient for Return Flow** in the Exception Criteria is to take that definition out of context to a meaning and use that was never intended in the original document.

Ontario should never allow that to happen within its own jurisdiction. And further, Ontario should take the lead in the Five Year Review to make that distinction clear for all signatories to the Annex Agreement.

CFUW Ontario Council understands that there are in fact a very few existing intra-basin transfers where the water is not returned to the source watershed as required by the Annex. We understand that those existing transfers will have to be grandfathered (like those in Kingston, North Bay and Sarnia and even the current Grand Bend pipeline to London). As long as these transfers meet the rest of the Exception Criteria, and do not cause "any significant individual or cumulative adverse impacts", we respect and accept that they will be grandfathered.

It is important, however, to acknowledge the truth about these transfers - by acknowledging that they **ARE** in fact intra-basin transfers which do not meet the Exception Criteria of Return Flow to the source watershed. Even though in most of these cases there is not a great distance between inflow and outflow (with the notable exception of the Grand Bend-London pipeline), the water systems in these communities do provide an additional pathway for water to pass out from the basin of the Great Lake other than the natural pathway through the mouth of the downstream connecting channel.

CFUW Ontario Council also understands that in the future there may be a very few municipalities (probably smaller municipalities with fewer financial resources) that may find it impossible to find a source of potable drinking water sufficient to service their communities except through an intra-basin transfer of water - and further where they cannot meet the Return Flow requirement. This is the purpose for which the Exception Criteria were designed.

But it can never be acceptable to distort the definition of watershed in order to mask the reality of intra-basin transfers which do not meet the Exception Criteria of Return Flow to the source watershed.

The precedent that would be set in this Proposal Paper's failure to abide by the Annex mandate for Return Flow would have the potential for far-reaching consequences for the sustainability of the Great Lakes. There are a number of pending Intra-Basin proposals already within Ontario which would be affected by it. These include proposals for additional water supplies for Kitchener Waterloo and London, a Hamilton plan to move water west over the escarpment, an expansion of the Collingwood to Alliston pipeline beyond the Lake Huron watershed. There are some proposals involving Intra-Basin transfers already underway like the York Region sewage pipe to Lake Ontario. And there are unknown numbers of proposals yet to come, as municipal water supplies become more and more stretched by the demands of increased regional growth and decreased water quality.

It is difficult to understand why a government who has spent so many years in hard negotiation over the Annex Agreement, a government who has gained international respect for the integrity of its position, a government who has been so proud of its firm

commitment to safeguarding and sustaining the waters of the Great Lakes - why this government would propose to legitimize the creation of additional - new and increased - intra-basin transfers which do not meet the Exception Criteria of Return Flow to the source watershed by distorting the definition of watershed in order to circumvent the very restrictions Ontario fought so hard to see included.

RECOMMENDATION:

That the government of Ontario use the scientific and hydrological definition of "watershed" in the new regulation as part of their commitment to respect science and to ensure the safeguarding and sustaining of the waters of the Great Lakes, and that the downstream connecting channel NOT be considered part of the Source Watershed for the purpose of identifying new or increased intra-basin transfers.

and

RECOMMENDATION:

That the government of Ontario take the lead role in the Five Year Review Process to clarify the definition of "watershed" as it pertains to new or increased intra-basin transfers.

2. Establishing Baseline Information

CFUW Ontario Council agrees in general with the manner of calculating baseline amounts. There are three other issues though that we feel should be considered.

We would suggest that all PTTW's be reviewed to ensure that there is not too disproportionate a gap between approved amounts and/or system capacity and actual takings - especially in those PTTW's that were issued many years ago and have not undergone a recent Environmental Assessment - or in those pre-approved allocations (some granted years ago in the past) to municipalities for future capacity and growth.

We would also suggest that PTTW's which involve an intra-basin transfer out of a stressed watershed be reevaluated, and if necessary renegotiated, in light of the Water Budget that has been established by Source Protection Committees for that watershed.

CFUW Ontario Council recommends that when the baseline amount is set, it be linked with the provincial Conservation and Efficiency Strategy in order to realize a decrease in actual annual water takings in line with the Target set for the sector.

4. Regulating New or Increased Transfers;

and

5. Deciding How (and When) to Apply the Exception Criteria

CFUW Ontario Council would remind the government that the original intent of the Annex Agreement was to ban intra-basin transfers. It did make allowance for a few tightly regulated exceptions.

The focus of this proposal paper has shifted from the Annex mandate of banning intra-basin transfers and finding ways - through various conservation strategies or alternate sources of water - to avoid the transfers. It is now focused instead on managing and regulating the transfers. With that shift in focus, it loses the original Annex vision, the vision that Ontario helped create and that Ontario signed on to. Instead, in opposition to the Annex vision, it seems prepared to accept intra-basin transfers as a normal part of water use in Ontario.

There seems to be a huge and inexplicable disconnect between the Conservation and Efficiency strategy which wants to correct the "myth of abundance" about our water resources and specifically about the water resources in the Great Lakes, where only one per cent of the water is renewed annually - and the assumption with this proposal for regulating Intra-Basin Transfers that it won't matter if we double the intake pipes and return flow downstream - because (it is assumed) it won't really make a difference - there's "an abundance" of water there to make up for it.

The effectiveness of the Exception Criteria in regulating applications for new and increased transfers will depend on the government's interpretation of several issues:

- The definition of watershed as it relates to the imperative for Return Flow - will it be the scientific hydrogeological definition - or a politically expedient redefinition?

- Will tributaries of rivers in another watershed be considered eligible to meet the requirements for return flow to the source watershed?

- How will "significant individual and cumulative adverse impact" be quantified? Will it also take into account the adverse effects on groundwater supply caused by dewatering? It is vital to prevent another environmental catastrophe such as that caused by the dewatering for the York Region's "Big Pipe".

- What scientific basis will there be to determine the extent of the "surplus" supply of water available for intra-basin transfers without causing damage to the integrity of the source watershed system in the future?

- Who will assess what is "reasonable", "feasible", "cost-effective" - These are all relative terms - are they all subject to appeal by the party proposing the intra-basin transfer? Can they be defined in real numbers?

Even if the present government is confident that they understand how they will interpret these issues, can they be equally sure that another government at another time will have to interpret them in the same way?

It will require safeguards in strong clear language and tight Regulation to ensure that the original intent and vision of the Annex will be honoured, and that the highest standards will be maintained.

RECOMMENDATION:

That the definition of "watershed" as it applies to Return Flow in the Exception Criteria be made explicit and consistent with the scientific and hydrological definition, and that it NOT include the downstream connecting channel.

RECOMMENDATION:

That the tributary of a river be considered to meet the exception criterion ONLY if that river lies within the boundaries of the source watershed and drains toward and into the source Great Lake; and

That the tributary of a river which drains into a downstream connecting channel is NOT considered to meet the exception criterion of Return Flow.

RECOMMENDATION:

That the potential extent and impact of dewatering be considered early in the application process for a proposed pipeline to carry an intra-basin transfer, and that the potential adverse effect on groundwater be a part of the "significant" or "cumulative" impact study under the Exception Criteria.

RECOMMENDATION:

That the Water Budget established for each Great Lake and each sub-watershed of each Lake through Source Protection be assessed, taking into account the annual renewal of water through precipitation - and the loss through evaporation and climate change - to determine the amount of "surplus" water in each system that can safely be transferred out of the system without long-term cumulative damage to the watershed and its ecosystem. And that all intra-basin transfers be reassessed as to their sustainability in light of that assessment and if necessary be renegotiated.

And where the existing scientific data is not sufficient to asses this, that the Precautionary Principle be used.

RECOMMENDATION:

That the "reasonable" assessment of implementing conservation measures be factored against the increased cost of additional infrastructure, energy and wastewater disposal of the new supply of water; and

That the ecological cost be factored in to the equation of what is considered "reasonable", "feasible", and "cost-effective" - and that a value be assigned as a percentage of the cost of an intra-basin transfer project to enable government to mandate the twinning of pipes and pumps to ensure return flow of new or increased transfer amounts to the source watershed.

Municipal Process: The Proposal Paper makes a good first step in recognizing that the Municipal process for applying for a new or increased Transfer is not rigorous enough at the beginning to facilitate a fair understanding of the requirements and/or the environmental implications of the total project or to prevent projects that have the potential to ultimately fail meeting the exception criteria from progressing.

Figure 5 on page 30 of the Proposal Paper (Slide 14 of the Consultation presentation) shows that the first step for a municipality would now be to outline how exception criteria **will be** addressed, and receive preliminary approval by the MOE Director on those plans. However, if those plans run into trouble, cannot be completed, or are not completed, there is still the situation that the municipality would already have invested time and money, and that they would be part way into the project before a problem is

properly flagged. By then, there is pressure on the approval bodies to allow the project to continue, and it becomes increasingly difficult to stop.

RECOMMENDATION:

That the first step in the Municipal application process would be a detailed Report to the MOE Director which would demonstrate how the requirements of the Exception Criteria had been met.

This would include:

- **a list of the completed projects based on recognized Best Practice for conservation of existing water supplies with supporting data to indicate the success of those measures - as well as**
- **a demonstration of the conservation measures, again based on recognized Best Practice, which had been designed into the infrastructure of the areas where the new water supply would be used;**
- **a description of the whole project with a demonstration that there would be no individual or cumulative adverse effects to the surface water in the source watershed, to the groundwater in either of the watersheds due to dewatering, or to the ecosystem in either watershed as a result of the transfer;**
- **A description of how and where the water would be returned to the source watershed.**

RECOMMENDATION:

That the government of Ontario compile a list of Best Practice initiatives that could be used by municipalities as a guideline to help them meet the requirement for conservation measures prior to applying for a new or increased transfer.

RECOMMENDATION

That an application for a new or increased intra-basin transfer would not be processed under a Municipal Class EA, but would instead fall under the more rigorous requirements of an Individual Environmental Assessment.

Non-Municipal Process: Applications for a non-municipal new or increased intra-basin transfer should follow the same rigorous steps as outlined above for the municipal process. There should never be an exception granted to the requirement for Return Flow. We would not expect that any of these requests/applications would be granted.

Other Comments:

- CFUW Ontario Council is very **supportive of the government of Ontario's continuing efforts to frame the protection of our waters into law** - giving precedence, wherever there is a conflict between two or more laws, to the law which provides the greatest protection to the water resources.

- CFUW Ontario Council would suggest there be a **greater consideration and acknowledgement given to conservation initiatives within the natural environment** - for example, the preservation of wetlands and stream restoration.

- CFUW Ontario Council would like to see **more linkage between these Regulations for the SSOWA and the regulations being developed under the CWA for the work of Source Protection Committees.** Water taking has been identified as a land use and as such falls within the SPC area of concern. Protecting the quantity of source water is also an SPC mandate. How will that be linked to the PTTW process?

- CFUW Ontario Council would like to see a **greater consideration of the issue of waste water management as it affects intra-basin transfers and return flow** - for example, the York Region situation.

- CFUW Ontario Council would like to see a **greater priority**

    - **on the formation a committee for science and data collection,** and
    - **on the establishment of Great Lake Targets for all lakes**.

PART 3. WATER CHARGES

CFUW Ontario Council approves of the extension of the water charges program to cover low and medium consumptive water users.

We would hope that once the program is established, the rates will gradually increase until they cover not just portion, but all water management costs, including many of the new conservation initiatives that will be implemented from Table 2 of the Conservation Strategy.

Grandfathering

CFUW Ontario Council **commends the government for its decision to end the grandfathered** exemptions of water takers, and to require now that all water takers in the province must apply for a PTTW and be subject to the water charge.

Charging Municipal Users

CFUW Ontario Council would **support Option #2** requiring industrial and commercial water users that are drawing water from municipal supplies to report directly to the Ministry. It would provide the surest way to keep all data of water taking gathered together in one place. This data would then be accessible for Source Protection assessments in calculating demands on watersheds and sub-watersheds for their Water Budgets. It would be accessible for scientists and contribute to data required within each of the Great Lakes when trying to assess their sustainability. And it would be accessible to government to assist them in measuring success and compliance rates with the new conservation initiatives and targets.

CFUW ONTARIO COUNCIL:

The Ontario Council of the Canadian Federation of University Women is composed of 57 clubs comprised of graduates living in urban and rural areas across Ontario. We are non-partisan, non-sectarian and we are totally member funded. Our members are active in public affairs, advocating on public education, justice, health and environmental issues as well as the status of women and human rights. Ontario Council is part of the Canadian Federation of University Women and has links to the International Federation of University Women.

Respectfully submitted,

Myra Willis
President, Ontario Council
Canadian Federation of University Women

APPENDIX A:

CFUW Ontario Council Response to Consultation on Intra-Basin Transfers, Sept. 2009 - presented verbally in Toronto and London by Carolyn Day and in Kingston by M. Elaine Harvey

There are many definitions of a watershed and watershed boundary in the academic and scientific world (see attached list Appendix A.2)

All definitions have one parameter in common - they all include the direction of flow of water INTO a basin - and they define the watershed boundary as being the dividing line (height of land) from which water flows in two different directions.

This fact is acknowledged in the Proposal Paper pg. 23 where the definition of watershed is given as being "based on surface water flow".

The watershed map used on Slide 3 of the Public Consultation presentation and on pg. 23 of the Proposal Paper - shows each Great Lake watershed encompassing the upstream connecting channel only. The downstream channel is shown as part of the watershed of the next (lower) Great Lake. The same delineation between watersheds is given in the US EPA watershed maps. Yet the government is now proposing to redefine watershed to include the downstream channel to meet the Exception Criterion for Return Flow.

Consider the schematic of water flow between two lakes (Appendix A.1):

> The first schematic demonstrates that all water in the watershed is flowing into Lake #1 - except the water in the downstream connecting channel which is flowing toward Lake #2

The hydrology of the system is even more evident when we change the schematic from top view to side (elevation) view. When water enters that downstream connecting channel it is lost to the source Great Lake.

Also lost is the imperative set in the Annex Agreement to look for alternate solutions to the water transfer project when there is an Intra-Basin Transfer without Return Flow.

It is important to ask the question - Why was Return Flow made a criterion for the Exception Standard for Intra-Basin Transfers? What made Return Flow so important?

It was TO PROTECT THE VOLUME OF WATER WITHIN EACH GREAT LAKE - TO ENSURE THAT THE WATER RESOURCE WAS SUSTAINABLE.

So that leads to second important questions –

- **What was the rationale for choosing a new definition of watershed that includes the downstream connecting channel in the Annex Agreement - despite the fact that the definition is inaccurate from a hydrological perspective? and**

- **What is the rationale for the current Ontario proposal to accept this inaccurate definition and incorporate it into our law?**

Even the MOE presenter at the Public Consultation in London admitted that the definition of "watershed" which included the downstream connecting channel was not based on hydrology.

Was the choice of this definition, then, a Political choice rather than a scientific one?

It is disingenuous to contort the definition of the watershed to mask the reality of the Intra-Basin Transfers which do not meet the Exception Criterion of Return Flow.

It leads to specious arguments that are clearly contrary to reality, such as:

- If water is taken from Lake Erie and returned to the Niagara River below the Falls, it is still part of Lake Erie - even though it is over 300 feet below it?

- Perhaps we should argue that there is nothing ominous about the Chicago diversion because it is clearly just the downstream connecting channel between Lake Michigan and the Mississippi. So clearly it must be still part of the Lake Michigan watershed and is therefore nothing to worry about?

It is also disingenuous to propose (on page 33 of the Proposal Paper) that the Exception Criteria for Intra-Basin Transfers will not be dealt with through Regulations - but in Guidelines "to assist in interpreting the exception criteria" to "allow flexibility in adapting the criteria to suit different circumstances". That is bound to create "loopholes" and leaves the application of the Exception Criteria open to potential abuse.

Ontario has signed the Annex and passed the Safeguarding and Sustaining Ontario's Water Act, 2007 (SSOWA)

In signing, Ontario committed to the principles of safeguarding and sustaining the water resources of the Great Lakes. By accepting the downstream connecting channel in the definition of a watershed for the purpose of satisfying the criterion for Return Flow, Ontario negates the principles of safeguarding and sustaining our water resources.

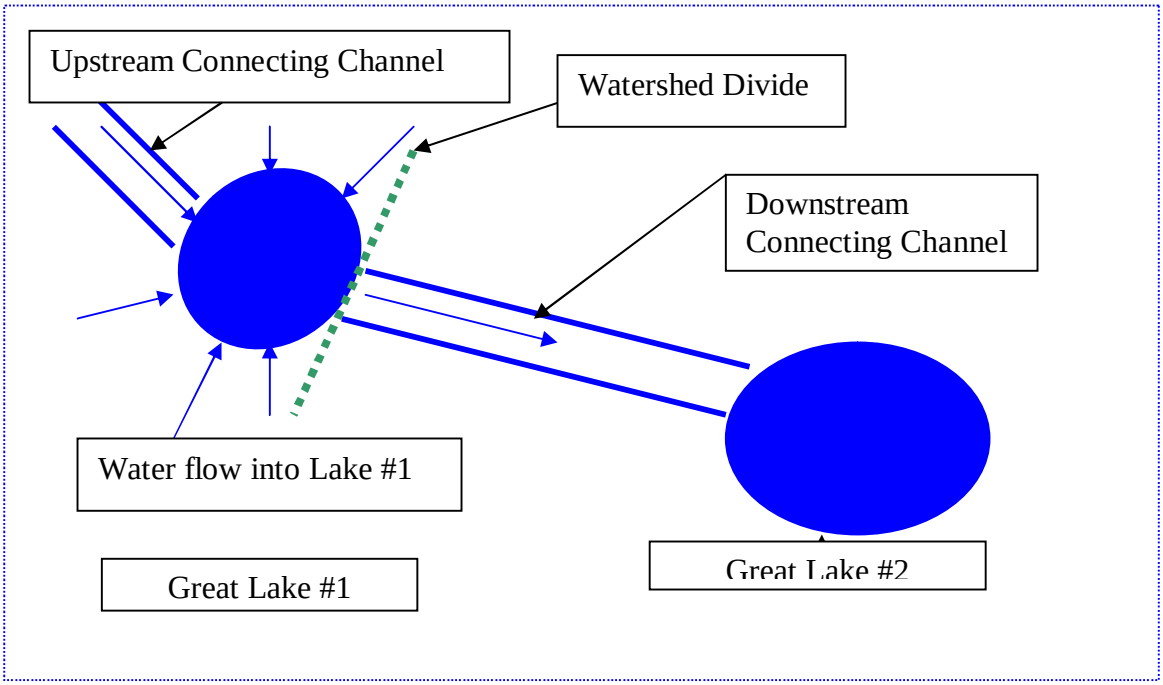
In signing, Ontario committed to the use of the most current science. By accepting the downstream connecting channel in the definition of a watershed for the purpose of satisfying the criterion for Return Flow, Ontario negates the principles of science and posits a situation that runs contrary to science and hydrological reality.

In signing, Ontario also committed to ban Intra-Basin Transfers with few tightly regulated exceptions. By accepting the downstream connecting channel in the definition for the purpose of satisfying the criterion for Return Flow, and by proposing Guidelines that allow flexibility in adapting the exception criteria to suit the circumstance, Ontario is making a decision to accept and "manage" the transfers rather than "ban" them, thus making the "exceptions" the norm.

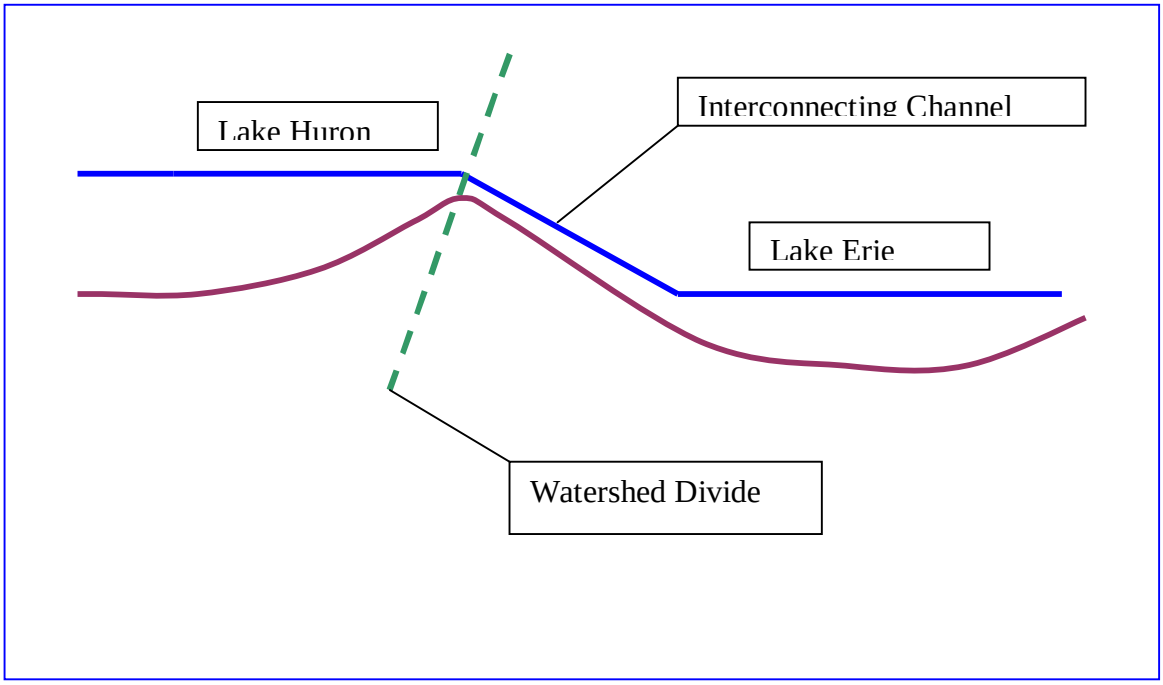
Ontario must not accept the downstream connecting channel in the definition of watershed for the purpose of satisfying the Exception Criterion for Return Flow. Instead it must adopt language, definitions and Regulations that live up to the vision of the Annex & the SSOWA and to the government's international and provincial commitments under the Act to ban intra-basin transfers and safeguard and sustain our Great Lakes' waters.

Appendix A.1

Water Flow into and out of a Great Lake Basin:



Side Elevation:



Appendix A.2:

Definitions of a Watershed

We do not inherit the earth from our ancestors,
we borrow it from our children.
- Haida Proverb

watershed n. A ridge of high land dividing two areas that are drained by different river systems. Also called water parting.

The term *watershed* describes an area of land that drains downslope to the lowest point. Other terms used interchangeably with watershed include *drainage basin* or *catchment basin*. *Oregon State University*

Watershed: a region or area bounded peripherally by a divide and draining ultimately to a particular watercourse or body of water. Merriam Webster Dictionary

Watershed: the entire geographical area drained by a river and its tributaries; an area characterized by all runoff being conveyed to the same outlet; Princeton University

"Watershed" is the term used to describe the geographic area of land that drains water to a shared destination. The drainage system (and the watershed) also includes the geographic area surrounding the stream system that captures precipitation, filters and stores water, and determines water release into stream systems. The stream system is the visible, aboveground portion of a larger drainage system. A watershed, therefore, is "an area of land that drains water, sediment, and dissolved materials to a common outlet" (Federal Interagency Stream Restoration Working Group 1998). Watershed boundaries always follow the highest ridgeline around the stream channels and meet at the bottom or lowest point of the land where water flows out of the watershed. The boundary between watersheds is defined as the topographic dividing line from which water flows in two different directions.

Watershed: Area above a body of water or watercourse that partially surrounds it and contributes water from rain and/or other sources. Business Dictionary

Watershed is "The area contained within a drainage divide above a specified point on a stream." A divide is defined as "The line of separation between drainage systems." American Geological Institute Dictionary of Geological Terms

A watershed divide: "The elevated boundary line separating the headstreams which are tributary to different river systems or basins." Penguin Dictionary of Geography

A watershed is an area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater, like the land that drains into the Great Lakes. Conservation Ontario

A watershed is "the area of land which drains into a given location." Dr. Brian Luinstra, PhD, P. Geo

APPENDIX B

Canadian Federation of University Women
ONTARIO COUNCIL

Policy relating to the

Safeguarding Ontario's Water Resources for Future Generations
EBR # 010-6350

Note: CFUW Ontario Council policy integrates policy passed by CFUW Ontario Council as well as that of CFUW and IFUW

1988 **Drinking Water Quality**

RESOLVED, That the Canadian Federation of University Women urge the Government of Canada, to enact legislation which would establish substantive and procedural laws in order to:

1. set rigorous quality standards for ground and surface drinking water which would be updated frequently to reflect current research and increased technology; and develop strict standardized inspection, testing and enforcement procedures to uphold these standards;

2. fund research into the identification and removal of substances in the drinking water which may be harmful to human health and distribute the results of such research to the provincial and territorial authorities responsible for administering water quality legislation;

3. provide user protection by:
   a) requiring immediate public notification of instances of water contamination and ensuring an adequate supply of safe water either by decontamination or the provision of alternate sources; and
   b) requiring the inclusion of safe water provisions in Emergency Planning Canada and promoting emergency planning schemes at other government levels.

2004 **Protection of Water**

The 28th IFUW Conference resolves:
that National Federations and Associations (NFAs) urge their respective governments to:

1. protect water resources and specifically declare that water, being a non-renewable natural resource of paramount importance, be protected at all levels of government and its use and price be regulated;

2. oppose all efforts to make privatization of water a condition for receiving financial aid,

3. adopt and implement a sustainable and prudent water management policy to respond to long-term regional needs with due regard to the ecosystem and hydro-geological reality; and,

4. promote conservation and more efficient use of surface water and groundwater at individual, local, national and international levels.

2001**Canadian Water**

RESOLVED, That the Canadian Federation of University Women (CFUW) urge the federal, provincial and territorial governments of Canada to protect our water resources and specifically to declare that water, being a non-renewable natural resource of paramount importance, belongs to the Canadian public and its use must be regulated in the long-term public interest;

RESOLVED, That CFUW urge the federal, provincial and territorial governments to adopt and implement a sustainable and prudent water management policy to respond to long-term regional needs with due regard to the ecosystem and hydrogeological reality; and

RESOLVED, That CFUW urge the federal, provincial and territorial governments to promote conservation and more efficient use of surface water and groundwater at individual, local, provincial, territorial, national and international levels.

2000 **Canadian Water**

RESOLVED, That the Canadian Federation of University Women urge the Government of Canada and the provincial and territorial governments to take all measures necessary to ensure that large-scale freshwater commercial exports carried out by any means do not take place.

1995 **Sustainability**

RESOLVED, That national federations and associations should:

1. urge their respective legislative bodies to incorporate the protection of the environment as an overall goal into their basic laws;

2. help raise a general awareness of the necessity of protecting the environment, in particular by expounding the consequences of resource depletion, the degradation of natural systems, the dangers of pollution and the destruction of fragile ecosystems;

3. promote the education of girls and boys of all ages in science, technology and disciplines relating to the natural environment; and

4. encourage governments to promote the development of sustainable and ecologically sound consumption and production patterns including ecologically safe waste disposal, the re-use and recycling of resources, the reduction of air pollutants, the careful management of energy sources and the use of environmentally sound technologies.

1992 **Public Transportation**

RESOLVED, That the Canadian Federation of University Women (CFUW) urge the Government of Canada and provincial, territorial and municipal governments to:

1. Invest in public transportation to ensure frequent, reliable, convenient, affordable and universally accessible service;

2. Create incentives to encourage greater use of mass transit and discourage the use of private vehicles;

3. Mandate better co-ordination between land use planning and transportation planning to create more compact communities; and

RESOLVED, That CFUW urge its members to drive less and whenever possible to walk, bike, car pool or take public transit.

1990 **Preservation of Wetlands**

RESOLVED, That the Canadian Federation of University Women (CFUW) urge the Government of Canada to:

1. establish a standard system of evaluation of wetlands, in co-operation with the provincial and territorial governments in order to identify wetlands which it is agreed are worthy of preservation and statutory protection. (specially significant);

2. increase its support of research on wetlands;

3. increase its efforts to make the Canadian public aware of the vital importance of wetlands; and

RESOLVED, That CFUW urge their provincial and territorial governments to:

1. a) establish a system of evaluation for wetlands consistent with the national system, and to pass legislation to protect and monitor those wetlands which have been identified as specially significant;

b) increase their support of research on wetlands;

c) increase their efforts to make the public aware of the vital importance of wetlands; and to

2. a) be alert to any proposed development in areas where there are wetlands which might be degraded or lost; and
b) urge the relevant planning boards, municipal councils and like authorities at the local level to have evaluations done in order to preserve significant wetlands.

Appendix C

Canadian Federation of University Women
ONTARIO COUNCIL

Club Locations

Ajax – Pickering
Aurora - Newmarket
Barrie & District
Belleville & District
Brampton
Brantford
Burlington
Cambridge
Chatham - Kent
Cornwall & District
Etobicoke
Georgetown
Georgian Triangle
Grimsby
Guelph
Haliburton Highlands
Hamilton
Kanata
Kincardine
Kingston
Kitchener - Waterloo
Leaside - East York
London
Markham- Unionville
Milton & District
Mississauga
Muskoka
Nepean
Niagara Falls
Norfolk
North Bay
North Toronto
North York
Northumberland
Oakville
Orangeville & District
Orillia
Orleans
Oshawa & District
Ottawa
Owen Sound & Area
Perth & District
Peterborough
Renfrew & District
Sarnia Lambton
Saugeen
Scarborough
Southport
St. Catharines
St. Thomas
Stratford
Sudbury
Thunder Bay
Toronto
Vaughan
Welland & District
Windsor