



CANADIAN ENVIRONMENTAL LAW ASSOCIATION
L'ASSOCIATION CANADIENNE DU DROIT DE L'ENVIRONNEMENT

August 16, 2005

Minister David Ramsay
Minister of Natural Resources
6th floor Room 6630
Whitney Block
99 Wellesley Street West
Toronto, Ontario
M7A 1W3

Dear Minister Ramsay,

**Re: Comments on the Second Draft of the Great Lakes Charter Annex released
June 25, 2005 EBR Registry no. PB04E6018**

The Canadian Environmental Law Association (CELA) has been involved on Ontario's Advisory Panel and on the Advisory Committee to the Council of Great Lakes Governors on the Great Lakes Charter Annex. We are grateful to have been part of this historic effort. Our long standing concern about the continuing vulnerability of the Great Lakes to harm from large water withdrawals has lead us to focus over the last decade on reforms in improved protections from both diversions as well as in-basin withdrawals, and on limiting over use.

CELA joins others in congratulating negotiators on a vastly improved second draft. The extension of the prohibition on diversions that exists now in the Provinces to the Great Lakes States is the greatest accomplishment.

CELA will limit our comments on these draft agreements to several issues that we feel still have the potential to compound harm from water withdrawals to the integrity of the ecosystem. While there is urgency to move toward consensus by the fall of 2005, we feel it is crucial that we have a set of agreements that will be durable and give us the tools to address water challenges in the future. It is imperative that we insist that we do this with the greatest scientific certainty possible.

**The Exceptions
Straddling Counties**

We must say that we were very disappointed to see the straddling county options being proposed so late in the agreement negotiations. This is the consequence of jurisdictions with weak water management programs not having the history or tools to deal with water conflicts and challenges within their boundaries. We need to make sure we are not creating a solution for the few that overwhelms the intent of the Annex undertaking or prevents progress on preventative and protective actions for others.

CELA proposes one additional condition for Straddling Counties.

1. We recommend that each applicant should also be required to demonstrate that they are already within the groundwater portion of the Great Lakes St. Lawrence River watershed.

This does **not** mean that all areas within the groundwater of the Basin should be considered straddling but only areas that are within counties that currently straddle the Basin. We have been struck in our work with both Advisory Committees and with the Great Lakes Commission's Water Resources Management Decision Support System for the Great Lakes study by the lack of sound science we currently have to apply to decisions on water use in the Great Lakes. Directive 5 of the Annex 2001 undertaking commits the jurisdictions to improving our understanding in a way that supports decision-making. All agree that our biggest knowledge deficit is our understanding of the relationship of groundwater to surface water in the Basin. It is crucial that we start to expand this understanding now by starting to apply sound science to the exceptions we are allowing. This will ensure that we do not begin this effort by setting a bad precedent by compounding harm to the ecosystem by placing expediency before sound science.

Intra-Basin Diversions

CELA has paid particular attention to how the Annex drafts impact intra-basin diversions because we are convinced that they are just as harmful as diversions to the areas deprived of flows between the point of taking and the discharge. This is particularly important in Ontario right now because:

- the Province's water-taking regime does not have explicit return flow provisions,
- there is a history in Ontario of municipalities diverting water from one Great Lakes Basin and returning it to another, and
- there are a significant number of Ontario municipalities now actively considering pipelines for future water supplies.

The first draft of the Annex Agreements equated intra-basin transfers with diversions and required the same conditions to mitigate harm from both. The second draft muddies the waters by creating a graduated scale, based on volumes withdrawn, that would allow most intra-basin transfers to return flows to another Great Lake from the Great Lake that is the source of the withdrawal. The Ministry of Natural Resources tells us that only one pipeline proposal in Ontario would ever have been required to return flows to the same Great Lake if this latest draft were in place at the time. Most other proposals would fall into the middle range of 379,000 litres per day to 19 million litres per day or 100,000 U.S. gallons per day to 5 million U.S. gallons per day. Thus they would not necessarily be required by the latest draft to return water to the Lake of origin. We contrast the volumes this draft allows to be permanently removed from parts of the Basin with the 50,000 litres per day that is the level Ontario currently considers protective of the province's water supplies.

Potential Consequences

CELA is very concerned that the current intra-basin draft will allow cumulative withdrawals without return flows that could be harmful to the health and well being of Ontarians and of the areas of the system where withdrawals are permanent. To cite several examples...

The areas downstream from Canada's chemical valley have always been vulnerable to spills. The First Nation at Walpole Island and the town of Wallaceburg have repeatedly had to close down their drinking water intakes after such spills. While considerable efforts are being made to reduce these spills, the sad reality is that the health of residents along the St. Clair depends on the dilution of pollution. What are the additional risks to them of concentrating pollution by reducing the flows in the St. Clair River? Most of the pipeline proposals in Ontario contemplate withdrawing water from Lake Huron Georgian Bay and returning the withdrawal to Lake Erie or Lake Ontario.

This month we have had premonitions of climate change impacts on Ontario. The CBC reported that *Power plants are worried as heat wave warms the Great Lakes* (see attached article). The article states that Ontario's water supply for power may be in jeopardy because a weeks-long heat wave has warmed the waters in the Great Lakes and lowered the levels of northern rivers. Ontario could be facing blackouts. Ontario Power Generation representatives stated that the warmer the water gets the less efficiently it cools the generators. That in turn reduces the generation capacity. If the current Annex provisions resulted in intra-basin transfers from Lake Huron to Lake Ontario, would the loss of flows through the Niagara power plants compound the reduced generation capacity in summer heat waves or in times of prolonged drought and impact power security of the whole Province? With the chronic shortages of power supplies in the Province this is a real concern.

CELA has always been concerned by the localized impacts of water withdrawals at the point of taking. Consequently we continue to support returning water to the same point of taking for all withdrawals to avoid harm. Failure to require return flow could result locally in a number of potentially significant impacts such as, loss of habitat, spawning grounds and even bio-diversity.

The intra-basin provisions in the recent drafts of the Annex Agreements, create options that may create an incentive for applicants to seek water volumes under the thresholds to avoid additional requirements to: return flow to remediate harm at the point of taking, scrutinize alternatives and undergo regional review. We already have a problem in Ontario assessing the cumulative impacts of pipelines because they are approved section by section under a class environmental assessment process and often grow like hydras overtime. There is currently no means to adequately evaluate the overall impacts, need, alternatives and magnitude of these pipeline projects. Once they reach their final limits it is too late.

What degree of harm will reduced flows at the withdrawal source and on the regions bypassed by intra-basin transfers? CELA believes we will also not be able to determine this until it is too late. For these reasons,

2. We recommend that return flow be required for all intra-basin transfers of water regardless of their volume (as they were in the 2004 draft) and that the Sustainable Water Resources Agreement, Procedures Manual and Compact be altered to require this.

This will protect the areas at the source of the withdrawal. It also minimizes harm to areas bypassed in intra-basin proposals.

Should these provisions remain in the next draft of the Annex, CELA will be urging the Province of Ontario to change their water protection laws to avoid creating these potentially harmful consequences.

Transparency

When the straddling communities, straddling counties and the Illinois exclusions were proposed, CELA repeatedly asked for Ontario to clarify the magnitude of these exclusions. Ontario has made efforts to research this but the States proposing these exclusions have not provided further information on the scope of these exceptions. CELA attempted to research the straddling county option and was only able to get limited information through a US Census site for 2003. Our research showed the percentage of the population in each state residing in the Straddling Counties but we were unable to refine our knowledge by subtracting the populations already within the surface water boundaries of the Basin. We did find the following percentages of state

populations resided in straddling counties in 2003: New York 20.34%, Pennsylvania .03%, Ohio 17%, Indiana 24% Illinois 47% and Wisconsin 24%. All of Michigan is within the Great Lakes Basin.

3. We recommend that it should be incumbent upon those jurisdictions to provide further information on just which communities and their populations straddle the basin and the additional population that could potentially be added by the straddling county option.

We continue to have a lot of concerns and disquiet about the Chicago Diversion that removes most of that State's water from the Great Lakes Basin. We do not want to sanction this in perpetuity.

4. We still recommend that future increases in the Chicago Diversion above the level set by the current Supreme Court decree should be subject to all provisions of the Annex, including the return flow requirements.

Meaningful Progress

CELA sincerely hopes that the resolve to protect the Great Lakes with a legally binding compact and regional agreement with measures to protect ecosystem integrity is not lost to concerns that it will bring change. These changes are long overdue and necessary for our region to have the tools to face a water-short world. This summer's heatwave that brought so many dramatic changes in the Region, is a precursor of things to come. We cannot wait for over a decade to implement the terms of this agreement. We have the ability now to extend the resiliency of the Great Lakes through achievable water conservation programs.

5. We recommend that the Great Lakes Charter Annex be implemented within five years and that the jurisdictions commit to begin drafting their conservation plans at once so they will come into force as soon as the Agreements are approved.

We wish you success in bringing these negotiations to a successful conclusion. If we succeed in protecting our waters now the health and well being of our Region will grow and we will have an economic advantage in the future when it will no longer be viable to locate water intensive activities in arid areas.

Yours truly,
Canadian Environmental Law Association



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Water Researcher



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Copy to:

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Great Lakes – St. Lawrence River Basin Sustainable Water Resources Agreement
EXCERPTS FROM DRAFT PROCEDURES MANUAL
October, 2005

PART 1: PREPARATION OF AN APPLICATION AND REVIEW OF A PROPOSAL TO WITHDRAW WATER

1. PROPOSAL REVIEW GUIDANCE

A) Return Flow

Description of Intent

The intent of the Return Flow requirement is to ensure that all of the Water Withdrawn from the Great Lakes Basin is returned to the Source Watershed, less an allowance for Consumptive Use, in order to support the ecological health of the system and for further use. It is recognized that Consumptive Uses will occur and the amount of Consumptive Use will differ depending of the use of the Water. The desire is that Consumptive Uses be reasonable and that the Proposal maximizes the return of Water at a quality that meets all applicable Water quality requirements. Except as provided for in the Agreement, Return Flow shall be required to the Source Watershed for all New or Increased Withdrawals subject to the Standard.

Application Requirements

Applicants must submit a description of their Return Flow program. This program description should include:

- A description on how the Water will be returned. To the extent the local entity that will be discharging the Return Flow is not the Applicant for the project, agreements must be presented demonstrating that the Return Flow will be guaranteed;
- An estimate of total Return Flow by volume and as a percentage of Water Withdrawn;
- Location of Return Flow;
- An estimate of Consumptive Use, including historic use information. These estimates may be presented in the form of project engineering design plans or utilizing United States Geological Survey (USGS) or other Consumptive Use coefficients. To the extent use estimates are greater than “generally accepted Consumptive Use coefficients,” the Application must include a detailed explanation and justification for projected additional Consumptive Use;
- A description of the anticipated Water quality of the Return Flow including a description of the proposed measurement methods (quality and quantity) and discharge location(s); and,
- A certification that the Return Flow shall consist only of Water Withdrawn from the Great Lakes Basin, except for groundwater that may infiltrate into wastewater systems.

Criteria for Decisions

In determining if a Proposal has successfully met the requirements for Return Flow, the following shall be evaluated:

- The clarity and completeness of the description of the Return Flow program, including the quantity, quality and location of the Return Flow.
- The verification and justification of Consumptive Use estimates, by sector, using engineering estimates or Consumptive Use coefficients.
- There is no replacement water from outside the Basin.
- The Return Flow meets all applicable water quality Standards.
- Water that is returned to the Source Watershed via non-point sources (e.g. percolation, infiltration, septic system seepage) shall be considered part of Return Flow.

In reviewing Consumptive Use estimates, commonly used coefficients shall be used as a benchmark. It is understood that specific use situations vary and that in some cases higher use amounts may be justified. It is also understood that research will continue and that Consumptive Use information will improve. As of now, the Great Lakes Commission Survey, Spring 2002, entitled, "Consumptive Use Coefficients By Water Use Category Among Great Lakes Jurisdictions and USGS" is one benchmark evaluation tool for the listed water use categories, recognizing that coefficients will be updated periodically to reflect advancements in conservation practices. Recommendations from the International Joint Commission's February 2000 report shall also be considered, as appropriate, in the context of evaluating the adequacy of the elements of the Proposal relating to Return Flow.

B) No Significant Individual or Cumulative Impacts

Description of Intent

The intent of this Standard provision is to ensure that New or Increased Withdrawals result in No Significant Adverse Individual or Cumulative Impacts to the Water and Water Dependent Resources of the Great Lakes Basin. This provision is central to the Parties' commitment to responsible resource protection and management.

Application Requirements

Applications must be submitted with detailed information related to the proposed project including the location of the New or Increased Withdrawal and Return Flow.

The Proposal should include the following information:

- Source and location of the Withdrawal and Return Flow;
- A description of baseline conditions regarding hydrologic flow, water quality and habitat;
- A projected Withdrawal schedule including peak 30-day demand over the 90-day averaging period;
- Anticipated changes in Water quality and Water dependent natural resources;
- A description of all mitigation measures that will be implemented to prevent or eliminate significant impacts; and,
- A statement of how the Proposal would relate to other existing Withdrawals, Diversions and Consumptive Uses for purposes of enabling the Parties to collectively evaluate Cumulative Impacts from this Proposal. The Applicant shall use data and analyses on Cumulative Impacts that are available from the Parties.

Criteria for Decisions

In determining whether a Proposal has the potential for significant impacts, the Parties shall consider the impacts that may be reasonably expected to occur from the Proposal based on consideration of the following criteria and factors:

- The completeness of baseline information presented;
- Location, type, extent, scale and duration of impacts;
- The mitigation measures proposed, if any;
- Potential cumulative effects of related or anticipated future projects (supply and demand analysis), including the potential for precedent-setting consequences;
- The geographic and temporal scale of potential impacts; and,
- Individual impacts will be evaluated in the context of Cumulative Impacts. Where watershed plans exist, Applicants shall discuss impacts based upon these plans. Potential impacts on other users will be evaluated.

A Water Withdrawal Proposal will be considered to have a significant ecological impact if there is a significant change to any of the following parameters:

Physical Criteria

- Measurable change to the pre-Proposal range of variability of the hydrologic regime
- Degradation of structural habitat
- Disruption of pre-Proposal connections between and among habitats
- Disruption of pre-Proposal temperature regime of the hydrologic system
- Significant/measurable impacts to existing Water uses

Chemical Criteria

- Disruption of natural productivity of the ecosystem
- Introduction of potentially harmful toxins, contaminants and excessive nutrients
- Disruption of the hydrologic system's ability to process toxins, contaminants, and nutrients

Biological Criteria

- Decline in population levels or health of native species
- Introduction of non-native species
- Disruption of biological interactions such as predation and competition
- Introduction of harmful microorganisms and no elevation of microorganisms to harmful level
- Impact on human health

Compliance with the Originating Party's environmental regulatory requirements (water and air) could contribute to a demonstration of the lack of significant ecological impact. In some cases, these processes require a showing of no impact. In these cases, such a finding by an Originating Party could meet the requirements of this section.

C) NO REASONABLE WATER SUPPLY ALTERNATIVE

(Applicable when Applicant is seeking an Exception)

Description of Intent

The purpose of this requirement is to ensure that there are no reasonable alternatives available that would eliminate or diminish the need for an Exception.

Application Requirements

Applications for the Exception shall include a narrative description of the need. This description should include an analysis of the efficiency of current water Withdrawals, including the application of Environmentally Sound and Economically Feasible Water Conservation Measures as outlined in Section 1.F. of this Manual.

The application shall include an analysis of water supply alternatives available and considered to meet the new or increased need. This analysis shall address quantity and quality (including treatability) of alternative sources. The analysis shall describe the rationale for not using the other considered water supply alternatives.

Criteria for Decisions

A clear demonstration of alternatives considered, the analysis undertaken and conclusions and findings of this analysis shall be evaluated. There must be a showing that no reasonable water supplies are available. To determine what is reasonable, three factors will be evaluated for alternative options, including: 1) resource protection; 2) technology; and, 3) cost.

Water conservation and efficient use of existing water supplies must be an alternative that is pursued first to minimize or eliminate the need for the New or Increased Withdrawals described in Section 1.F. of this Manual.

D) Efficient Use and Conservation of Existing Water Supplies

Description of intent

The purpose of this requirement is to ensure that the need for a New or Increased Withdrawal of Great Lakes Basin Water cannot be reasonably avoided through the efficient use and conservation of existing water supplies available to the Applicant.

Application Requirements

Applications shall include a narrative description of the need for the proposed New or Increased Withdrawal. This description should include an analysis of the efficiency of current water Withdrawals, including the application of Environmentally Sound and Economically Feasible Water Conservation Measures as outlined in Section 1.F. of this Manual.

Criteria for Decisions

Water conservation and efficient use of existing water supplies must be an alternative that is pursued first to minimize or eliminate the need for the New or Increased Withdrawal. A clear demonstration must be made that the requirement for additional Great Lakes Basin Water cannot be minimized or eliminated through the application of

Environmentally Sound and Economically Feasible Water Conservation Measures as outlined in Section 1.F. of this Manual.

E) Quantities that are Considered Reasonable

Description on Intent

The purpose of this requirement is to ensure that the Withdrawal of Great Lakes Basin Water shall be limited to quantities that are considered reasonable to meet the requirements of the intended use.

Application Requirements

The Applicant must estimate the highest 90-day average use for the period for which the approval is being sought. The Application must include a Water use plan. For a public water supply system, publicly or privately operated, the plan must include:

- A description and map of the service area at the time of the Application and projected for up to twenty years or for the period for which the approval is being sought.
- Water use and population projections at the time of the application and projected for the next five, ten and twenty years. Population projections should be credible and the entity conducting the projections identified. Water use must be presented in terms of maximum use for any 90-day period for a given year. Water use must also be presented in terms of annual average gallons or litres per day.
- A description of the capacity of the Withdrawal, treatment and distribution portions of the system.
- An assessment of the water use savings of current and proposed water conservation programs.

Applications for other uses, such as industrial or agricultural, must include a plan that projects Water use at the time of application and projected for up to twenty years or for the period for which the approval is being sought. Water use must be presented in terms of maximum 90-day average use for a given year and in terms of annual average gallons per day.

Criteria for Decisions

In determining if a Proposal has successfully met the requirements of this Standard provision, the Proposal shall be evaluated in terms of how realistic and reasonable the quantity of the proposed Water Withdrawal is to meet the requirements of the intended purposes for the Withdrawal. The review shall be conducted in concert with the review of the Proposal's Environmentally Sound and Economically Feasible Water Conservation Measures to determine how effective it is in minimizing the quantity of the Withdrawal or Consumptive Use.

The proposed Water use projections shall be evaluated upon the following criteria:

- The presentation of current use information – including proposed Withdrawal and/or Consumptive Use;
- The existence of a Water use plan with credible multi-year use projections; and,
- The potential effectiveness of current and proposed Water conservation programs in minimizing the Withdrawal and/or Consumptive Use of Water.

F) Environmentally Sound and Economically Feasible Water Conservation Measures

Description of Intent

The purpose of this Standard provision is to encourage efficient use through demand reduction and supply-side Environmentally Sound and Economically Feasible Water Conservation Measures and incentives. Environmentally Sound and Economically Feasible Water Conservation Measures can be grouped into two general categories: 1) “hardware” devices or equipment; and, 2) behavior or management practices. Examples of Water Conservation Measures for different water use sectors are provided in Table 1 from the *Handbook of Water Use and Conservation* (Vickers, 2001). Conservation incentives are incentives that motivate water users to implement Environmentally Sound and Economically Feasible Water Conservation Measures. They can be classified into three categories: 1) educational, 2) financial, and 3) regulatory. Examples of conservation incentives are presented in Table 2 from the *Handbook of Water Use and Conservation* (Vickers, 2001).

The Decision Making Standard includes a strong requirement regarding water conservation. All Proposals for New or Increased Withdrawals of Great Lakes Basin Water shall incorporate Environmentally Sound and Economically Feasible Water Conservation Measures to minimize Water Withdrawals or Consumptive Use.

Table 1. Types of Water Conservation Measures (Source: *The Handbook of Water Use and Conservation* (Vickers, 2001, p. 6) and the Great Lakes Commission’s Report *Water Resources Management Decision Support System for the Great Lakes-St. Lawrence River* (May, 2003)).

Water Use Sector	Hardware/Technology	Behavior/Management Practices
<i>Residential and Domestic</i>	<ul style="list-style-type: none"> • Low-volume toilets and urinals • Waterless and composting toilets and urinals • Low-flow showerheads and faucets • Water-efficient appliances such as clothes washers and dishwashers 	<ul style="list-style-type: none"> • Shut off unnecessary flows from faucets • Restrict outdoor water use • Use water-efficient practices for clothes washers and dishwashers (full loads, no pre-rinse, wash cycles)

Water Use Sector	Hardware/Technology	Behavior/Management Practices
<i>Landscapes</i>	<ul style="list-style-type: none"> • Native and drought-tolerant turf and plants • Drip irrigation • Automatic shut-off hoses • Rain sensors 	<ul style="list-style-type: none"> • Water less frequently (schedule during early or late hours) • Soil improvements and apply appropriate mulches • Use water-efficient landscape maintenance practices
<i>Industrial, Commercial, and Institutional Facilities</i>	<ul style="list-style-type: none"> • Cooling towers with recirculated water • Reuse process water • Leak detection and repair 	<ul style="list-style-type: none"> • Shut off unused valves • Use water-efficient operational practices
<i>Agriculture</i>	<ul style="list-style-type: none"> • Low-energy precision application of irrigation water • Canal lining • Tailwater recovery • Laser leveling • Drip irrigation 	<ul style="list-style-type: none"> • Use weather-controlled irrigation systems • Regular maintenance of irrigation systems • Use water-efficient cultivation practices
<i>Water Utilities</i>	<ul style="list-style-type: none"> • Distribution system leak detection and repair • Hydrant capping 	<ul style="list-style-type: none"> • Regularly service and adjust system valves and connections • Pressure management to reduce volume of water used

Table 2. Types of Conservation Incentives (Source: *The Handbook of Water Use and Conservation* (Vickers, 2001, p. 7) and the Great Lakes Commission's Report *Water Resources Management Decision Support System for the Great Lakes-St. Lawrence River* (May, 2003)).

Type of Conservation Incentive	Examples
Educational	<ul style="list-style-type: none"> • Direct-mail literature, television and radio advertisements, media coverage, demonstration gardens and projects, school education programs, conservation checklists developed for specific industries, local workshops and training programs for specialized users

Financial	<ul style="list-style-type: none"> • Bill credits, rebates, conservation pricing/rate structures
Regulatory	<ul style="list-style-type: none"> • Water-efficient policies, laws and plumbing codes for water-efficient fixtures and appliances, Standards for landscape design, irrigation scheduling, penalties for outdoor water waste, pollution prevention requirements

Application Requirements

All Proposals shall provide a detailed description of the Environmentally Sound and Economically Feasible Water Conservation Measures that have been and will be employed in the project. This must include water conservation goals as described below.

In addition to guidance provided by a Party's water conservation program, descriptions of an Applicant's Environmentally Sound and Economically Feasible Water Conservation Measures may include the elements outlined in the planning steps below. The planning steps, which are adapted from the *Handbook of Water Use and Conservation* (Vickers, 2001) and the USEPA's *Water Conservation Plan Guidelines* for Water systems (August, 1998), are meant as guidance for all water use sectors.

1. Identify Conservation Goals

- Establish Water use reduction goals (e.g. percent or volume per day).
- Determine the timeframe of the Water conservation program for existing and proposed Withdrawals.
- Description of community involvement in goals-development process.

2. Develop a Water-Use Profile and Forecast

- Identify existing Water supply sources, Water use (average and peak use/demand), total Withdrawal and Consumptive Use.
 - For Water systems, agricultural water districts, and industry, describe production characteristics of existing facilities if any.
 - For irrigation and other agricultural uses, the plan should demonstrate that systems are properly designed for soil characteristics, topography, climatic conditions, and crop types. Information should include:
 - Soil types and percentage of each
 - Purpose of irrigation (e.g. upland crops – corn, soybeans, fruit, etc.); golf course, sod, greenhouse etc.)
 - Acreage under each crop and total acres irrigated
 - Monthly irrigation schedule
 - Irrigation method(s) to be used
- Forecast anticipated future Water use/demand and costs associated with infrastructure changes (expansion, improvements or new facilities).

3. Identify and Evaluate Environmentally Sound and Economically Feasible Water Conservation Measures

- Review of Water conservation measures and incentives that have been implemented if any.

- Identify other Water conservation measures that save Water and identify conservation incentives that would motivate Water users to implement Water measures (see Tables 1 & 2 for examples), including consideration of generally accepted management practices and principles for the appropriate water use sector.
- Develop a matrix of Environmentally Sound and Economically Feasible Water Conservation Measures and incentives that can be considered options.
- Evaluate measures in terms of the following:
 - Potential Water savings (i.e. reducing Water loss and minimizing the need for a Withdrawal or increased Withdrawal to the maximum extent possible)
 - ◆ Estimate the short-term, long-term, average-day, and peak-day Water savings that can be achieved by each measure as well as the total (and/or per capita) Consumptive Use reduced.
 - Benefits and costs
 - ◆ For all Water uses, consider reduced need for new or additional Water supplies, reduced operation and maintenance costs, and environmental preservation. For water systems or agricultural water districts, consider deferred, downsized or eliminated new facilities for water systems and customer benefits.
 - ◆ Estimate conservation program costs including implementation and monitoring costs.
 - ◆ Determine cost-effectiveness of measures based on benefits and costs over the life of the program.
 - Applicable laws, regulations, and standards
- Identify any short-term or long-term obstacles (e.g. socio-economic, legal, etc.) to implementation of the measures.

4. Select Environmentally Sound and Economically Feasible Water Conservation Measures

- Identify quantitative criteria for selecting measures and associated program incentives. For example, identify the cost-effectiveness of Environmentally Sound and Economically Feasible Water Conservation Measures in terms of the avoidance of capital costs or through potential Water savings such as reducing Water loss and minimizing the need for a Withdrawal or increased Withdrawal.
- Identify qualitative criteria for selecting Environmentally Sound and Economically Feasible Water Conservation Measures and associated incentives, as appropriate. For example, identify the potential ease of implementation and the relationship of alternatives to other regulatory approvals that may be required.
- Evaluate and rank measures and incentives using quantitative and qualitative selection criteria.
- Justify why each measure and incentive should be selected or rejected.
- Refine total future Water use/demand forecasts taking into account Environmentally Sound and Economically Feasible Water Conservation Measures and incentives selected.

5. Implement the Conservation Plan

- Develop a strategy and timetable for implementing and monitoring the plan's Environmentally Sound and Economically Feasible Water Conservation Measures.

6. Monitor, Evaluate, and Revise Water Conservation Program as Needed

- Monitor and evaluate each measure's effectiveness by assessing actual Water savings (i.e. reducing Water loss and minimizing the need for a Withdrawal or increased Withdrawal to the maximum extent possible), and program costs and benefits.
- If necessary, adjust the Water conservation program, based on findings from the monitoring and evaluation process, to ensure that Water-savings goals are met.

Criteria for Decisions

All Proposals will be evaluated on the adequacy of the Environmentally Sound and Economically Feasible Water Conservation Measures proposed and implemented. There must be water conservation goals to ensure efficient use. There must be a description of how water use is quantitatively measured (e.g. metering) to provide an accurate picture of water demand, supply, loss and projected savings; a forecast of anticipated future water use and demand; an identification and analysis of alternative methods and practices; and, an implementation and evaluation strategy.

G) COMPLIANCE WITH APPLICABLE LAWS

Description of Intent

The Applicant bears the responsibility that the proposed Withdrawal will be in compliance with all applicable municipal, State, Provincial and federal laws as well as regional, inter-State, inter-Provincial and international agreements, including the Boundary Waters Treaty of 1909.