

REGION OF HALTON Planning and Public Works Presentation by Credit Valley Conservation Nov 28 2001

- Study done for the U.S. and Canadian governments on the Great Lakes released in 2000
- showed that only 1% of the Great Lakes is renewable -the rest is relict water left over from the last ice age- Great Lakes levels will fall if this 1% is not maintained
- the 1% is dependent on groundwater, rain and surface water from the watersheds such as the Credit that feed the Great Lakes
- Discussions with senior policy advisors of MNR who have been dealing with the Great Lakes issues for years reveal that they are not certain we are not already below the 1%
- The 1% is a lot of water but we must not forget that we are in competition for the Great Lakes water with the U.S. and Canada does not have a veto to protect from a Great Lakes diversion
- water use in the Great Lakes consists of 1) consumptive use and 2) removals
- Removals: the U.S. is taking water out of the system at Chicago and at two smaller locations in the U.S. If a larger U.S. diversion occurred to the U.S. southwest it would likely be taken out of Chicago.
 - Currently Canada is diverting water into the Great Lakes from the Albany River system in northern Ontario at the Long Lac and Ogoki diversions. The Long Lac and Ogoki diversions represent 6% of the supply to Lake Superior. If these diversions were not in place, water levels would be 2.4 inches lower in Lake Superior, 4.3 inches in Lake Michigan- Huron, 3.1 inches in Lake Erie and 2.8 inches in Lake Ontario.
- Consumptive use: 1993 data for consumptive use are revealing
 - Close to 90% of the consumptive use is from the Great Lakes itself with the remaining 10% coming from tributary streams and groundwater sources
 - Canada consumes 33% and the U.S. 67%
 - Irrigation 29%; public water supply 28%; industrial use 24%; fossil fuel thermoelectric and nuclear uses 6% each; self-supplied domestic use 4% ; livestock watering 3%
 - When water is used for irrigation 70% is lost; when used for public supply and for industrial purposes 10% is lost (average consumptive rate, considering all types of uses is about 5%)
 - Groundwater is very important to the Great Lakes system . The USGS estimate over 8 million people on the U.S. side rely on groundwater for drinking. The effects of groundwater withdrawal may be a concern on a local or subregional basis
- **The bottom line is that the Great Lakes are not a secure source of water for the long term. Even if a municipality had a Great Lakes water supply the latter is still partially dependent on the watersheds such as the Credit watershed in any case- the watersheds providing surface and groundwater to the Great Lakes must still be protected.**
- **What are watersheds like the Credit facing over the next 20 years???**

- They are facing urbanization, contamination, mining, water takings and agriculture
- **We are facing climate change-** climatic conditions control precipitation (and thus groundwater recharge), runoff and direct supply to the Great Lakes as well as the rate of evaporation. If removals and in-Basin consumptive use remain relatively constant, during dry, hot-weather periods, inflow is decreased and evaporation is increased, resulting in lower lake levels and reduced flows. **An example of how quickly water levels can change in response to climatic conditions occurred during 1998-99 when the levels of Lakes Michigan Huron dropped 22 inches in 12 months**
- **Urbanization and other pressures**
 - CVC watershed is 21% developed
 - 565,855 people live in the watershed
 - In 20 years could reach 40% urbanization or 75% population increase
 - **Rivers and creeks start “to act up” when the watershed is 15-30% developed and are seriously stressed when urbanization reaches 40-50%**
 - **This causes an increase in flooding and erosion, and a decrease in the base flow of rivers**
 - **The system is less able to hold groundwater because of deforestation, reduction of vegetation and because there are more impervious surfaces which don’t allow groundwater to be adsorbed- the estimate is that for every person there is ½ acre of impervious surface created**
 - **There will be greater water takings from agriculture, water bottlers, golf courses, industry (including aggregates) and municipalities i.e. greater consumptive use and removals**
- **CVC in the next year will largely complete about \$15 million worth of research on its water supply- We are the first conservation authority that has a substantial handle on what water is available water budget) in this watershed for allocation to users and still be sustainable**
- The studies are showing that given the pressures we are facing there will be less water available per person in this watershed just because of urbanization- never mind climate change
- Initial rough estimates are that the province has allocated 60% of the available water currently- this we are told should never go beyond 50%- we are reviewing and refining this information further

What must we do to make sure our water supply is sustainable over the long term.

Locally

- Water conservation
 - Metering, leakage detection, decrease water use
 - Stormwater management
 - Best sewage treatment that technology allows

- Water allocation
- Water valuation
- **Protect land that affects water**
 - Stewardship
 - Land acquisition
 - Be consistent with Provincial Policy Statements in Official Plans
- **Don't straighten or shorten streams- keep streams as natural as possible- we can't engineer all solutions like we once thought**
- Retrofit

Provincially:

- No matter how much we do locally we still won't be able to protect water quality and quantity in the long term without co-operating with the provincial and federal government
- Only they can provide some of the tools and sufficient money
- Need to provide a Provincial Water Management Framework to develop a Provincial Water Policy – why- refer to Premier's letter
- Are missing allocation, valuation, effective strong provincial organization for water management (suggest 1 ministry not 4), consolidation of water legislation, clarification of municipal, conservation authority and provincial responsibilities
- Conservation Authorities who are responsible for source water quality and quantity provision to municipalities are underfunded- Province needs to provide permanent funding mechanism

Federally:

- Have responsibility for Great Lakes
- Should help provide protection for watersheds that feed the Great Lakes- eg. Funding for projects to replant, retrofit, land acquisition, etc.
- Should obtain a Canadian veto for withdrawals from the Great Lakes
- Have tried to put a Federal Water Policy in place but have not been effective to date.

Jointly:

- Further scientific studies (water budgets, water monitoring, water quality, etc.)
- Data collection and distribution
- Public education, communication

Conclusion- a pipe to the Great Lakes may solve a short term water supply problem to a municipality but – the Great Lakes is not a secure long term water supply. All levels of government and conservation authorities must cooperate and soon. We can't get away from protecting local ground and surface water sustainability or there will be detrimental social, environmental and economic consequences.