

# TORONTO

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June 2, 1998

To: Works and Utilities Committee

From: H.W.O. Doyle  
City Solicitor

Subject: Agreement for Additional Water Supply to the Region of York  
Principle that the Agreement be in Perpetuity

Recommendation:

It is recommended that this report be received for information.

Council Reference/Background/History:

At its meeting held on July 2nd and 3rd, 1997, Metro Council, by its adoption of Clause No. 3 of Report No. 9 of its Environment and Public Space Committee, as amended, authorized the preparation of a new agreement for additional water supply to the Region of York ("York"). Metro Council requested a report to its Environment and Public Space Committee on the implications of the proposal that the agreement with York be in perpetuity. In particular, the proposed principles forming the basis of the agreement were set out in attachment A of the Clause. The relevant proposed principle states "Agreement in perpetuity subject to review at mutually agreed intervals (say ten years)". This report addresses the issue as requested by the former Metropolitan Council.

Comments and/or Discussion and/or Justification:

The statutory authority allowing the Metropolitan Corporation to supply water to York was contained in subsection 40(2) of the *Municipality of Metropolitan Toronto Act*. Similar provisions are contained in the *City of Toronto Act, 1997 (No. 2)*. The relevant subsections state as follows:

- "15(1) The city may enter into a contract to supply water to another municipality for its own use or for resale to the inhabitants of that municipality.
- (2) The contract may run for a period not exceeding 20 years and may be renewable for further periods not exceeding 20 years at any one time.
- (3) No contract under subsection (1) shall be made with a local municipality of a regional municipality."

A statutory limitation therefore exists that the contract with York cannot exceed twenty years. While there can be further renewal periods (each of which cannot exceed twenty years) upon expiry of the initial and subsequent renewal periods, one or more of the parties (depending upon the contractual terms) would have the discretion to renew the contract or renegotiate. Under the terms of the subject draft agreement, as negotiated, York has the option to renew the agreement upon the same terms and conditions for successive renewal terms of 20 years.

Contact Name:

J. Anderson, 392-8059



H.W.O. Doyle  
City Solicitor  
Legal Services

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May 12, 1998

2c.

Ms. Novina Wong, Clerk  
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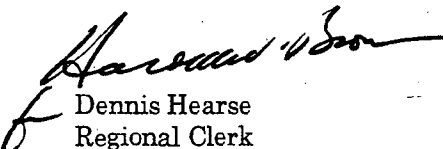
Dear Ms. Wong:


The Council of The Regional Municipality of York, at its meeting held on **Thursday, May 7, 1998**, adopted, without amendment, the appended Clause No. 4 contained in Report No. 9 of the Transportation and Works Committee, headed "**Aurora, Newmarket and East Gwillimbury Water Servicing Issues**".

By the adoption of the foregoing clause, Regional Council has approved the following:

1. Regional Council endorse the strategy outlined in this report regarding the integration of surface water supplies with existing groundwater sources in Aurora, Newmarket and East Gwillimbury and;
2. Regional Council adopt Clause 1 of Report No. 4 of the Transportation and Works Committee referred back to staff at its meeting of February 26, 1998, including the schedule of capital works contained therein;
3. Regional Council adopt Clause 2 of Report No. 6 of the Transportation and Works Committee referred back to staff at its meeting of March 26, 1998;
4. staff report back to Council by October 22, 1998 with the results of work carried out to detail the implementation schedule for Regional water supply facilities in the Aurora, Newmarket and East Gwillimbury area; and,
5. once the infrastructure requirements are confirmed, staff be authorized to negotiate front-ending arrangements, with benefiting land owners, in conjunction with Town staff to ensure services are delivered in a timely manner.

Yours truly,

  
Dennis Hearse  
Regional Clerk

  
Doris Sue/oc  
Enc.

cc: Commissioner of Transportation and Works

Sent to: Clerk, Town of Newmarket  
Clerk, Town of Aurora  
Clerk, City of Toronto

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Clause No. 4 embodied in Report No. 9 of the Transportation and Works Committee was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting on May 7, 1998.

## **4**

### **AURORA, NEWMARKET AND EAST GWILLIMBURY WATER SERVICING ISSUES**

The Transportation and Works Committee recommends the adoption of the following report, April 16, 1998, from the Commissioner of Transportation and Works:

#### **1. RECOMMENDATIONS**

It is recommended that:

1. Regional Council endorse the strategy outlined in this report regarding the integration of surface water supplies with existing groundwater sources in Aurora, Newmarket and East Gwillimbury and;
2. Regional Council adopt Clause 1 of Report No. 4 of the Transportation and Works Committee referred back to staff at its meeting of February 26, 1998, including the schedule of capital works contained therein;
3. Regional Council adopt Clause 2 of Report No. 6 of the Transportation and Works Committee referred back to staff at its meeting of March 26, 1998;
4. staff report back to Council by October 22, 1998 with the results of work carried out to detail the implementation schedule for Regional water supply facilities in the Aurora, Newmarket and East Gwillimbury area; and,
5. once the infrastructure requirements are confirmed, staff be authorized to negotiate front-ending arrangements, with benefiting land owners, in conjunction with Town staff to ensure services are delivered in a timely manner.

#### **2. BACKGROUND**

##### **1.1 History**

Two reports dealing with implementation of a long term water supply in the Region were recently considered by Regional Council. These were:

1. Clause 1 of Report No. 4 of the Transportation and Works Committee entitled "Long Term Water Project - Progress Report 3 and Results of York Water System Optimization", considered by Regional Council February 26, 1998.
2. Clause 2 of Report No. 6 of the Transportation and Works Committee entitled "Long Term Water Project - Lake Simcoe Water Treatment Facility Class Environmental Assessment - Aurora/Newmarket Supply Concept", considered by Regional Council March 26, 1998.

Both of these reports, which are attached to this report as Attachments No. 1 and 2 respectively, were referred back to staff for further information. Specifically, the Town of Aurora has requested that:

- i) surface water supply to the groundwater service area of Aurora/Newmarket be advanced to 2001 from the 2007 in-service date originally proposed; and,
- ii) that consideration be given to advancing Regional water supply to the Highway 404 development area to 2001 from the original 2011 in-service date.

There has also been a considerable amount of discussion at Regional and local Councils concerning the use of groundwater supply for the proposed Queensville community and the effect this may have on the ability of the other groundwater based communities to provide water service to development. This report will therefore also address the broader issues raised recently concerning groundwater supply in the area.

## **2.2 Purpose of this Report**

The purpose of this report is:

1. to provide background information on groundwater supply in the Aurora/Newmarket/East Gwillimbury area in terms of:
  - a) Yonge Street Aquifer characteristics and inter-relationship of municipal wells;
  - b) projected development vs. aquifer capacity;
  - c) benefit of uniform service rates to Aurora, Newmarket and East Gwillimbury; and,
2. to obtain Council endorsement of a work plan that will provide the Region with the necessary engineering and cost detail to assess advancement of surface water supply to Aurora/Newmarket and advancement of water servicing to Aurora's Highway 404 development area;
3. to obtain Council authority to retain an engineering consultant to analyse specific capital and operating requirements to introduce surface water supply to Aurora/Newmarket; and,
4. given the information contained in this report, to have the two previous reports, which were referred back to staff, adopted by Regional Council so that implementation of the broader Long Term Water Project can proceed.

## **3. DISCUSSION**

### **3.1 Groundwater Supply in Aurora/Newmarket/East Gwillimbury**

#### **3.1.1 Yonge Street Aquifer Characteristics**

The Yonge Street Aquifer is a water bearing sand and gravel formation located roughly 100 metres below ground. It extends from Bloomington Road northerly along the Yonge Street corridor through Newmarket and then north-easterly through Holland Landing and Queensville.

The approximate aquifer extent, together with locations of Regionally owned and operated municipal well supplies, are shown in Attachment 3.

Attachment 4 shows schematically how the municipal well supplies in the Yonge Street Aquifer are inter-related. The water level within the aquifer varies according to the pumping rate. Pumping at a greater rate results in a lowering of the groundwater level. The greatest effect (lowest water level) is seen right at the pumping location, however, water level is also lowered radially out from the pumping location, generally in the shape of a cone. For example, when the wells in Aurora are pumped at a high rate, the water level at the Newmarket wells is affected. This phenomenon is known as "well interference". It is because of the phenomenon of well interference that water takings from the Yonge Street Aquifer must be carefully monitored and balanced. It is also for this reason that the yield of a particular well or a group of wells (for instance those located in Aurora) cannot be looked at in isolation. This is recognized in the Region's Ministry of the Environment Permit to Take Water which is for the system of 20 wells drawing water from the aquifer, and not for individual wells.

Groundwater within any aquifer is replenished by "recharge" which consists of surface water infiltrating through the ground and leakage from lateral and/or higher aquifer formations. If the pumping rate is less than the recharge rate then the water level in the aquifer remains stable and when pumping is reduced, the water level recovers. If however, the pumping rate exceeds the recharge rate, the water level and aquifer yield can be permanently lowered. This is called "mining". Because of concern over mining of the Yonge Street Aquifer, York Region undertook a study in 1991 to attempt to quantify the maximum aquifer yield that can be obtained without mining. Results of the study indicated that a yield of 51 million litres per day, 365 days per year, could be realized from the aquifer without mining. Ministry of Environment officials have accepted this figure for use as a planning horizon, however, the current terms of the Permit to Take Water allow an average day withdrawal of only 42 million litres per day. The original system permit granted in 1994 contained the following additional conditions:

1. The safe aquifer yield must be re-assessed once actual withdrawals reach 38 million litres per day average.
2. A watermain had to be constructed, connecting the Aurora and Newmarket demand areas, to provide greater flexibility in balancing the yield of individual wells to minimize interference.

### 3.1.2 Projected Development vs. Aquifer Capacity

Attachment 5 shows existing and projected average day water demand from the Region's Master Plan for Aurora, Newmarket and East Gwillimbury in comparison to current permitted withdrawal and theoretical aquifer capacity. The figure clearly shows that, on an average daily basis, the aquifer capacity will be exceeded by about 2011 at current withdrawal rates. Without the proposed Queensville demand area, aquifer capacity might last as long as 2014, however, finding an additional source of supply will inevitably be required. It is quite clear that the aquifer will require supplementing with or without the proposed Queensville development. Growth in Queensville merely advances the need for the works. The financial implications have been considered in Council's approval of the Queensville Community Plan.

It should be noted that these graphs assume significant summer use limitations are in place and therefore peak demands are curbed. Without summer use restrictions, the aquifer

capacity could be exceeded five to ten years earlier.

### 3.1.3 Benefit of Uniform Service Rates to Aurora, Newmarket and East Gwillimbury

Tables 1A and 1B list Regional Capital expenditures for water and sewage service that will directly benefit Aurora, Newmarket and East Gwillimbury for the period 1997 to 2007. Total cost and pro-rata benefit to each area municipality are shown. The water service table assumes advancement of surface water supply and service to Aurora's Highway 404 development area to 2001.

**TABLE 1A**  
**Regional Capital Expenditures**  
**Water and Sewage Service**  
**1997 to 2007**

**WATER**

Year	Description	Total Cost \$	Benefit to Aurora \$	Benefit to Newmarket \$	Benefit to East Gwillimbury \$
1997	Aurora/Newmarket Interconnection	1,580,000	527,000	527,000	526,000
1997	Long Term Water Project Master Plan	1,500,000	90,000	121,000	69,000
1998	York Water Optimization	620,000	41,000	53,000	-
1998	Geological Survey of Canada	75,000	25,000	25,000	25,000
	Groundwater Investigation				
1999	Newmarket West Reservoir	2,500,000	-	2,500,000	-
1999	Aurora Wells 1-4 Standby Power	850,000	850,000	-	-
2001	Wellington Street Watermain	5,933,000	5,933,000	-	-
2001	Yonge Street Connection to Surface Water Supply (Note 2)	1,555,000	518,000	518,000	518,000
2003	City of Toronto Cost Shared Works	123,942,000	8,155,000	10,700,000	-
to 2005	Water Use Efficiency Program (including Maintenance Activities)	12,447,000	766,000	1,000,000	570,000
to 2007	Durham West Water Supply (costs to 2007 only)	168,257,000	11,071,000	14,467,000	-

Subtotal - WATER:    \$319,259,000    \$27,976,000    \$29,911,000    \$1,708,000

**Notes:**

1. Share of benefit based on 2031 population or on number of benefiting municipalities.
2. Excludes pro rata share of conveyance capacity in PD5,6,7,8

**TABLE 1B**  
**SEWAGE**

Year	Description	Total Cost \$	Benefit to Aurora \$	Benefit to Newmarket \$	Benefit to East Gwillimbury \$
1997	YDSS Master Plan	350,000	23,000	30,000	16,000
1998	Holland Landing WPCP Chemical Feed	100,000	-	-	100,000
1999	Inflow / Infiltration Study - Richmond Hill, Aurora, Newmarket	600,000	200,000	200,000	-
1999	SCADA Upgrading	750,000	83,000	83,000	83,000
2001	Aurora Forcemain Twinning	12,500,000	4,189,000	5,474,000	2,836,000
2001	Duffin Creek Optimization	10,050,000	695,000	866,000	-
2004	Lower Leslie Trunk Sewer	8,900,000	1,700,000	2,221,000	1,151,000
	Southeast Collector Sewer	19,160,000	1,325,000	1,731,000	897,000
	Duffin Creek Plant Capacity	90,000,000	4,500,000	6,000,000	-

Subtotal - SEWAGE:    \$142,410,000    \$12,715,000    \$16,605,000    \$5,083,000

Total WATER & SEWAGE:    \$461,669,000    \$40,691,000    \$46,516,000    \$6,791,000

Note: Share of benefit based on 2031 population or number of benefiting area municipalities.

From Tables 1A and 1B, the total value of water and sewage projects from which Aurora, Newmarket and East Gwillimbury will benefit is \$462 Million. Of this total \$94 Million is directly attributed to these three Area Municipalities. It is clear that this amount of capital would be difficult for the Area Municipalities to raise without the benefit of Regional uniform water and sewage rates and development charges.

The introduction of a uniform user rate in 1995 corresponded with Council's 1994 Development Charge By-law through which the practice of "charging back" the cost of Regional infrastructure to benefiting municipalities was discontinued. New capital projects are funded from Regional Development Charges (80%) and rates (20%). The uniform rate ensures that the costs are fairly apportioned among all users. The rate supported portion represents, in part, a measure of "betterment" that new facilities add to existing systems.

In addition, the introduction of a uniform user rate recognized the pending need to replace aging water supply facilities. The municipal wells from which the Town of Aurora supplies are drawn are, for example, an average 25 years of age. The need for rehabilitative work has increased in recent years and can be reasonably expected to continue to increase. Modifications to existing wells will be required prior to introducing alternative surface water supplies. Some of the older wells, which still provide the bulk of supply in Aurora, will require more extensive retrofitting to meet present day workplace standards.



Previous estimates as to the rate impact of the improvements suggested above, predicted that the Town's rate could increase from 19.5 cents per cubic metre in 1994 to over \$1.50 to meet the financing requirements. While this impact could be mitigated to some extent by development charges, the resulting rate would be significantly greater than the 41.34 cent per cubic metre uniform regional charge. This stands to reason since the service area is well removed from the source (Lake Ontario) and water supply has to be re-pumped through a number of sufficiently over-sized facilities to reach the area. An identical analogy exists with sewage servicing for the area, which is also Lake Ontario based.

### **3.2 Proposed Work Program to Assess Impact of Advancing Surface Water Supply and Servicing the Highway 404 Development Area**

Based on a comparison of costs associated with bringing surface water supply to Aurora/Newmarket from Lake Simcoe vs. Lake Ontario and taking into consideration approval requirements and environmental factors, the groundwater service area should be supplemented with water from Lake Ontario. This initial undertaking will be accomplished by extending the York Water System in Oak Ridges with a watermain on Yonge Street and Bloomington Road between the Oak Ridges standpipe and the Ridge Road tank in Aurora. Eventually, the majority of surface water supply will be pumped from the proposed Durham West supply to Aurora via the Leslie Street corridor. Costs and a schedule for implementing this work were contained in the Optimization Study prepared on the Region's behalf by Consumers Utilities. The implementation schedule was based on Regional planning projections.

It is important to note that the schedule of works outlined in the Optimization Study assumed total replacement, rather than supplement, of groundwater in Aurora and the west pressure zone of Newmarket. Supplementing the groundwater supply as opposed to replacing it, is expected to result in a schedule of capital improvements that can be phased-in with less onerous financial consequences. Compatibility of the two sources was confirmed through the Long Term Water Supply Master Plan in 1996. Further work is required to identify phasing opportunities taking into account new transmission mains and the buffering capability of the groundwater supply. Groundwater is presently the only source and serves year-round. Supplementary supplies will permit easing off on groundwater takings to the extent that they can be more heavily relied upon in peak periods thus deferring the need for major capital.

Regardless of whether the groundwater supply is supplemented or replaced, the same volume input of up to 24.5 million litres per day average day 2031 (50 million litres per day maximum day 2031) will be required and therefore the infrastructure required to get surface water to Aurora's distribution system is as identified by the Optimization Study. What does require further study, however, is how that surface water supply will be used. The following are examples of potential operating scenarios:

1. Surface water could be primarily in used in winter to satisfy much or all of the demand. This will permit greater recovery of the aquifer during the winter period. In summer when outdoor uses increase peak demands, the aquifer withdrawal can be maximized and surface water can be used to meet increased demands in the southern area of York Region.
2. Surface water could be fed to Aurora/Newmarket at a relatively constant rate year

round. This scenario may be preferable if there are industrial or institutional users in the system that are more sensitive to subtle changes in water quality resulting from varying mixtures of ground/surface water.

3. Surface water could be used to replace groundwater year-round in a given area. This is the scenario modelled in the Consumers Utilities Optimization Study. If it is found, for example, that the treatment processes used for groundwater would require modification because source mixing and the associated costs are considerable, this may be the preferred option.

Each of the above scenarios has a different implication in terms of the required infrastructure within Aurora and Newmarket. Each has different operating costs. It is therefore essential to determine the preferred method for using surface water and staging the necessary works.

Once the method for using surface water in the Aurora/Newmarket area is confirmed and the resulting infrastructure has been identified, it will then be appropriate to meet with Town staff and benefiting developers to assess timing and potential front-ending arrangements to ensure that services are delivered in a timely manner.

#### 4.0 FINANCIAL IMPLICATIONS

Sufficient funding for the engineering work described in Section 3.2 is available within the 1998 Capital Program as approved by Regional Council, January 1998. The work can be funded due to lower than anticipated expenditures for tank painting.

Without the benefit of the engineering work described, it is not possible to fully assess the financial impacts of advancing surface water supply to Aurora/Newmarket and Regional water service to the Highway 404 development area to 2001. Assuming, however, that the infrastructure identified in the Optimization Study for the Aurora/Newmarket area is required as noted, and given that financial allocations for water supply to Aurora/Newmarket were contained in the 1998 Ten Year Program, there appears to be flexibility to advance the work. It is desirable, however, to discuss a coordinated front-end financing agreement with major benefiting developers to ensure the timely delivery of service.

#### 5.0 CONCLUSIONS

The following conclusions are drawn from this report:

1. Municipal supply wells in the Yonge Street Aquifer are inter-related and must be treated as a system rather than on an individual basis.
2. Regardless of whether or not the proposed Queensville community is serviced from groundwater, the aquifer capacity is expected to be exceeded requiring a surface water supplement.
3. Aurora, Newmarket and East Gwillimbury all benefit from uniform service rates, especially when implementation of surface water supply becomes necessary.

4. In order to fully assess the infrastructure requirements and costs associated with advancing surface water supply to Aurora/Newmarket and advancing Regional water service to the 404 development area, it will first be necessary to retain an engineering consultant to detail how the surface water supply will be integrated into the existing groundwater supply. This should be done as quickly as possible.
5. There appears to be enough flexibility in the Capital works identified in the 1998 budget to permit advancing works as requested by Newmarket and Aurora. However, once the infrastructure is confirmed, a coordinated front- end financing agreement(s) should be discussed with Town staff and major benefiting developers to ensure timely infrastructure delivery.
6. The two staff reports previously referred back at the meetings of February 26, 1998 and March 26, 1998 should be adopted to enable implementation of the Long Term Water Project to proceed.

This report has been reviewed by the Senior Management Group.

(A copy of the attachments referred to in the foregoing has been forwarded to each Member of Council with the April 29, 1998, Transportation and Works Committee agenda and a copy thereof is also on file in the office of the Regional Clerk.)

Clause No. 1 embodied in Report No. 4 of the Transportation and Works Committee, which was referred back to the Commissioner of Transportation and Works, by the Council of The Regional Municipality of York at its meeting on February 26, 1998.

## **1**

### **WATER SUPPLY SYSTEM WATER SYSTEM OPTIMIZATION - YORK REGION**

The Transportation and Works Committee recommends the adoption of the following report, February 6, 1998, from the Commissioner of Transportation and Works:

#### **1. RECOMMENDATIONS**

It is recommended that:

1. the following recommendations with respect to water infrastructure needs contained in the "Summary Report of Hydraulic Model Development and Optimization Process" (the "Study"), provided under separate cover, be adopted:
  - a) staff plan to complete the Priority Projects identified in the Study at an estimated cost of \$21.7 million, by the year 2001 (the necessary 1998 works are included in the draft 1998 rate supported budget);
  - b) staff consult with each of the affected Area Municipalities to co-ordinate implementation, phasing with local works, ownership issues and possible impacts to local development charges; and,
  - c) staff liaise with development groups to assess timing of Strategic Projects as identified in the Study and discuss potential for front-end financing if advancement is required;
2. staff co-ordinate with City of Toronto staff the implementation of the Highway 27 watermain from Finch Avenue to Highway 7, identified as a priority project in the Study;
3. staff proceed with City of Toronto staff to complete during 1998 an update of the 1995 Water Supply Joint Study as outlined in this report; and,
4. staff prepare a further report regarding the cash flow implications and corresponding Development Charge reserve and rate impacts as outlined in this report.

## 2. BACKGROUND

This report represents the third quarterly progress report on the four individual projects underway by Consumers Utilities (CU) which comprise the Region's Long Term Water Project. These are:

1. Metro/York Water System Optimization
2. Water Use Efficiency Program
3. Lake Simcoe Water Supply Environmental Assessment
4. Lake Ontario (Durham West) Water Supply Environmental Assessment

In addition, this report will present the findings of the York Water System Optimization Study, completed as per the project schedule on January 15, 1998.

## 3. DISCUSSION

### 3.1 Metro/York Water System Optimization

#### 3.1.1 Study Results

Provided under separate cover, is a document entitled "Summary Report of Hydraulic Model Development and Optimization Process". It contains the Executive Summary and selected figures and tables from the Final Draft Report completed January 15, 1998. The Summary Report describes the work done in the study, its results and recommendations. Its main purpose was to identify, cost and stage the most cost effective infrastructure program to deliver adequate water supply to the Region to 2031. A sophisticated programming technique called "genetic algorithm" was used to optimize the infrastructure size and location.

Similar to the York-Durham Sewage System Master Plan adopted by Council in June, 1997, infrastructure requirements have been identified in terms of Priority Projects, Strategic Projects and longer term requirements to serve projected development in 10 year increments.

*Priority projects* are those required to address immediate capacity constraints and need to be in service by 2001. These projects are summarized in Table 1.

**Table 1**  
**Priority Projects - In Service by 2001**

<b>Project</b>	<b>Length (m)</b>	<b>Diameter (mm)</b>	<b>Cost Millions (\$1998)</b>
<b>1. Watermains</b>			
Highway 27 PD4 from Finch to Highway 7	4,400	750	\$ 6.9
Highway 27 PD5 from Highway 7 to Langstaff	1,600	750	1.8
Langstaff Rd. PD5 from Islington to Rutherford Rd.	650	300	0.3
McCowan Rd. PD6 from 16th Avenue to Major Mackenzie	2,000	600	1.4
Teston Rd. PD7 from Keele St. to Bathurst St.	4,000	450	2.0
* Wellington St. Aurora from Bayview to Industrial Pky.	1,100	900	1.7
* Wellington St. Aurora from Industrial Pky to Yonge St.	1,000	750	1.2
* Mulock Dr., Newmarket from Bathurst to Newmarket West Reservoir	1,600	300	<u>0.5</u>
<b>Sub-Total - Watermains</b>			<b>\$15.8</b>
<b>2. Pumping Stations</b>			
West Woodbridge PD5 PS (New) at Highway 27/7			\$ 2.8
Markham PD6 PS (Expansion)			0.5
Maple PD7 PS (Expansion)			0.3
North Richmond Hill PD8 PS (Expansion)			<u>0.2</u>
<b>Sub-Total - Pumping Stations</b>			<b>\$ 3.8</b>
<b>3. Storage Reservoirs</b>			
Newmarket West Reservoir			<u>\$ 2.1</u>
<b>Sub-Total - Reservoirs</b>			<b>\$ 2.1</b>
<b>Total - Priority Projects</b>			<b>\$21.7</b>

\*subject to confirmation of servicing from Lake Ontario, Lake Simcoe, or groundwater or a combination

*Strategic projects* are those projects that form key components of the long term infrastructure and are also required for anticipated short term growth. These projects may be required as early as 2007 and are listed in Table 2.

**Table 2**  
**Strategic Projects - In Service By 2007**

Project	Length (m)	Diameter (mm)	Cost Millions (\$1998)
<b>1. Watermains</b>			
Highway 27 PD5, Langstaff Rd. to Rutherford Rd.	2,200	500	\$ 1.1
Rutherford Rd. PD5, Highway 27 to Clarence St.	2,000	500	1.0
Rutherford Rd. PD5, Clarence St. to Islington Ave.	600	600	0.4
Islington Ave. PD5, Rutherford Rd. to Langstaff Rd.	2,000	500	1.3
Major Mackenzie PD6, McCowan Rd. to Warden Ave.	4,100	1,350	9.7
Major Mackenzie, PD6, Warden Ave. to Woodbine Ave.	2,000	1,200	3.4
McCowan Rd. PD6, Major Mackenzie to Durham West Reservoir	7,000	1,500	18.3
Woodbine Ave. PD6, Major Mackenzie to Rodick Rd.	1,000	900	1.2
Elgin Mills Rd. PD7, Bayview Ave. to Leslie St.	2,000	750	1.9
Keele St. PD8, North Maple PS to Teston Rd.	600	500	0.3
Teston Rd. PD8, Keele St. to Dufferin St.	2,000	500	1.3
Dufferin St. PD8, Teston Rd. to Kirby Rd. allowance	2,000	500	1.1
Kirby Rd. allowance PD8, Dufferin St. to Bathurst St.	2,000	500	1.1
Bathurst St. PD8, Gamble Rd. to Jefferson PS	1,700	500	0.8
Bathurst St. PD9, Jefferson PS to Gamble Rd.	1,700	400	0.8
Bathurst St. PD9, Humber Flats to Bloomington Sdrd.	600	500	0.7
Bloomington Sdrd. PD9, Bathurst St. to Yonge St.	2,300	500	0.8
<b>Sub-Total - Watermains</b>			<b>\$45.2</b>
<b>2. Pumping Stations</b>			
North Maple PD8 (New)			\$ 1.9
<b>Sub-Total - Pumping Stations</b>			<b>\$ 1.9</b>
<b>Total - Strategic Projects</b>			<b>\$47.1</b>

Note: Durham West Reservoir first phase would also be constructed as a Strategic Project, however, costs are not included here as it is considered to be part of the Durham West water supply project.

The total forecast expenditure to 2031 for watermains, pumping stations and reservoirs is \$187.1 million, the remaining \$118.3 (after Priority and Strategic projects) million being built out as development proceeds. Potential phasing of works for 2011, 2021 and 2031 is presented in the Summary Report.

### 3.1.2 Key Issues

A number of key issues need to be addressed in implementation of recommended works:

1. All of these projects are subject to co-ordination with Area Municipalities to avoid duplication of work and ensure adequacy of Development Charges. This activity has already commenced with Vaughan and Markham staff.
2. Co-ordination with City of Toronto (formerly Metro) staff to enable construction of the PD4 connection from Finch Avenue/Highway 27 northerly along Highway 27 into Woodbridge is required.
3. Co-ordination with area developers in the areas to be serviced by Priority Projects is required to ensure servicing strategies are compatible. Discussions are already underway with developers in the Woodbridge Expansion Area.
4. The study contained assumptions concerning water supply sources based on the best information available at the time. These included:
  - the total amount of water supplied from Toronto would remain at the 57 million gallons average per day as per the pending Toronto - Region of York water supply agreement;
  - the site of the Durham West treatment facility, and hence the point of entry of this supply to the Region, was assumed to be at the northernmost likely site near Stouffville Road; and
  - groundwater supplies in Newmarket/Aurora would be supplemented with surface water from Lake Ontario as opposed to Lake Simcoe.

Work is presently underway in other areas of the Long Term Water Project to address the above assumptions. It will, however, be necessary to confirm the suitability of recommended infrastructure should these conditions change. It is anticipated that staff will be able to do this confirmation in-house once staff training is completed over the next few weeks.

5. The issue of the amount of water that can be obtained from the Toronto system remains outstanding. Recent planning projections prepared by Toronto staff indicate that employment forecasts are lower than those carried in the previous joint study work. In addition, water use efficiency initiatives in both Toronto and York Region, together with demand analysis done in York during the Master Planning Phase of the Long Term Water Project indicate water demands should be lower than those used in previous joint work. Therefore, additional water supply may be available for sale to York



which may enable deferral of construction of the Durham West source of supply.

Staff are working with Toronto staff on a mutually acceptable Terms of Reference to update the previous joint study work. Each municipality has included in their draft 1998 budgets a total of \$500,000 for this work in 1998. It is expected that a Request for Proposal will be issued in February, 1998.

### 3.1.3 Financial Implications

The following table reviews estimated capital expenditures required to service the Regional Official Plan growth projections (to 2021) for water capital infrastructure. The initial column, being the Draft 1997 Development Charge Background Study, are estimates as of July 1997, following adoption by Regional Council of the Long Term Water Strategy.

The current water optimization exercise undertaken in conjunction with Consumers Utilities has focused primarily on refining cost estimates regarding the initial supply works. In addition, staff have reviewed all capital/cost infrastructure areas. The results of the further analysis is presented in Table 3 below with the heading Draft 1998 Development Charge figures.

**Table 3**  
**Long Term Water Supply**  
**Capital Expenditure Forecast**  
**1998 - 2021**

	1997 Draft DC Background Study	1998 Draft DC Background Study
Metro Supply	\$87.3	\$87.3
Groundwater	\$92.5	\$33.2
Treatment Plants	\$393.3	\$393.3
Internal Supply	\$114.9	\$155.7
Cash Flow Interest	\$67.0	\$67.0
<b>Total</b>	<b>\$755.0</b>	<b>\$736.5</b>

As indicated in the table the net impact of the further analysis on the regional water capital program is favourable. The results of the revised financial analysis should be incorporated in the Draft 1998 Development Charge By-law to clearly list the required infrastructure included in the Water Development Charge. In addition, staff should further report regarding the cash-flow implications of the proposed water capital program and the projected development charge reserve and rate impacts.

The last comprehensive study of the York Water System was done in 1990

and considered development only to 2011. Before this Study, there was no detailed 2031 infrastructure plan available and therefore, there is no basis of comparison to see what savings have been realized by use of the genetic algorithm technique. Based on a comparison with the joint study work (completed with Metro in 1995), however, substantial savings have likely been realized. That study recommended expenditure within York Region in the order of \$157 Million to service up to PD6 alone to the year 2011. Comparable works in the recently completed Optimization Study total \$102 Million. On this basis, the \$620,000 project cost represented considerable value in capital cost savings.

### **3.2 Water Use Efficiency Program**

This project commenced in early December, 1997. It includes implementation of a Region-wide Water Use Efficiency Program over a period of up to six years, plus an additional monitoring and maintenance period of two years. The first milestone in the work program is the preparation of a "Scope of Work" document which will include the following elements for each Area Municipality:

- description, estimated water savings and costs associated with each program element (leakage control, residential retrofit and industrial and commercial audit program);
- methodology for calculating water savings at the end of the full program
- preliminary work schedule
- description and estimated cost of maintenance required to sustain water savings
- description and estimated costs of a proposed Region-wide public education program.

According to the terms of the agreement with CU, the Scope of Work Report is due March 11, 1998.

For this program to be successful, the full co-operation of Area Municipalities will be required. Local Works staff have been briefed on the general elements of the program through the regular Area Municipality/York Transportation and Works staff liaison meetings. A more detailed presentation to CAO's in each Area Municipality is planned during the next Joint York Region CAO's meeting scheduled for February 11, 1998. The main objective of this presentation will be to introduce program elements at a senior staff level and obtain designated contacts in the Works and Finance Departments of each Area Municipality. Following this meeting, individual meetings will be arranged with project and Area Municipal staff to collect the detailed data required for completion of the scoping report.

### 3.3 Lake Simcoe Water Supply Class Environmental Assessment

This project is a Class Environmental Assessment for the proposed Lake Simcoe water supply facilities. It will consolidate the previous work done for the Georgina Water Supply and in the Long Term Water Project Master Plan and will consider the feasibility of constructing additional capacity for potential supply to Newmarket and Aurora. Previous hydrogeological work undertaken on behalf of York Region has indicated that the Yonge Street Aquifer will be unable to sustain anticipated development in the long term. The budget for this project is \$863,000 based on a completion date of November, 1998. This is less than the originally anticipated amount of \$1,076,000 authorized in the March 13, 1997 Council report, which assumed a two year time frame for completion.

Since retaining the sub-consultant group in early November, 1997 the major activities on this project have centered around notification of project initiation both to the public and key review agencies and in technical analysis for potential water takings from Lake Simcoe. Specific activities included:

- meetings with MOE including Environmental Assessment Branch, Central Region, York-Durham District Office, and Approvals Branch;
- meeting with Trent Severn Waterway staff
- meetings with Ministry of Natural Resources staff
- placement of project initiation notice in local newspapers December, 1997 (see Attachment No. 2)

A considerable effort has been made in evaluating the costs and benefits associated with taking additional water from Lake Simcoe for use in the Aurora/Newmarket service area as opposed to supplementing Aurora/Newmarket groundwater supplies with Lake Ontario water. The optimization study described in section 3.1 of this report clearly identified the costs associated with supplementing the Aurora/Newmarket groundwater supply with Lake Ontario water. Work is ongoing now to undertake a similar analysis of costs for supplementing water supply with Lake Simcoe water. It is anticipated that the results of this analysis will be the subject of a further report to Council prior to proceeding with the process of notification under the Great Lakes Charter.

If it is decided to further pursue the additional Lake Simcoe water taking for use in Aurora/Newmarket, it would be necessary to make a technical submission to the Ministry of Natural Resources to document the reasons for the additional taking, including the financial analysis of alternatives and other environmental issues.

The Ministry of Natural Resources would complete an internal review in consultation with the Region and other Ministries and would submit the proposal to

the Premier's Office. If accepted, the Premier's Office would then initiate the formal "Prior Notice and Consultation" process under the Great Lakes Charter by notifying the Offices of the Governors of the respective Great Lakes States and the Premier of Quebec, the appropriate management agencies of the Great Lakes States and Provinces, and, if deemed appropriate by the Province, the International Joint Commission. The notice would include a description of the proposal and provide for a 45 day period for comments and objections. In the event of an objection, the Charter requires that the Province convene a consultation process to investigate and consider the issues involved, and to seek and provide mutually agreeable recommendations. The Province would subsequently notify each affected Great Lakes State or Province of its final decision to issue, with conditions, or deny approval.

If it is decided to pursue the additional water taking, it would be proposed to the Province that the "Prior Notice and Consultation Process" be initiated while the Class Environmental Assessment is ongoing. The timescale for the "Prior Notice and Consultation" process is between 4 - 5 months.

Additional technical work is ongoing to identify viable alternatives for treatment technologies, intake locations and pipeline routings which will then be evaluated during the Environmental Assessment.

It is anticipated that the initial Public Information Centres will be held in April, 1998. A project schedule is attached as Attachment No. 3.

### **3.4 Lake Ontario via Durham West Water Supply - Individual Environmental Assessment**

The established budget for the first part of this project, which is preparation of a detailed Terms of Reference document for approval by the Minister of the Environment, is \$1.6 Million. The Terms of Reference document is prepared with full public and agency consultation, and forms a blueprint for the remainder of the Environmental Assessment, including a description of the range of alternatives to be evaluated and how they will be studied, evaluated and ranked. Once the Terms of Reference are approved by the Minister, the work program for the conduct of the Environmental Assessment is set and cannot be altered unless there is a significant change in the undertaking. It is appropriate, therefore, that at the time the Terms of Reference is approved by the Minister, the budget for the remaining work will be negotiated with CU. The upset limit for the entire Environmental Assessment was up to \$9.1 Million according to the March 13, 1997 Council Report.

The majority of activity on this project has been related to project initiation notification and public/review agency consultation. The original Terms of Reference schedule called for public information centres to be held during December, 1997. This was deferred to the first two weeks of February so that preliminary discussions

could be held with review agencies and, in particular, with staff and Council of the Town of Pickering and with staff of Durham.

At Pickering's request, York staff have agreed, in principle, to provide for participant funding to Pickering out of the project budget. It is proposed to pay for an independent consultant to provide, on behalf of the Town, the necessary technical review of any submissions to Pickering and to ensure that adequate provision is made in the Durham West Terms of Reference to address potential environmental impacts on the Town. It is anticipated that this role will be filled by an individual in the consulting engineering field who has experience in water projects of this type and in Environmental Assessments. The independent consultant, the Terms of Reference for his or her work and the upset limit for fees will be mutually agreed upon by York and Pickering. York Region has requested and obtained this kind of arrangement in the past for projects which are new to it, for example, from The Interim Waste Authority. It is a successful mechanism in advancing a project because both parties are provided with a level of comfort that their needs are addressed, at relatively low cost.

Discussions have commenced with Durham staff to incorporate into the work program an analysis of potential costs and benefits for Durham participation in water supply works.

Advertisements have been placed in the local papers and the Toronto Star for Public Information Centres in 6 locations in York and Pickering February 3, 4, 5, 10, 11 and 12 (see Attachment No. 4). Project staff have attended initial consultation meetings with Ministry of the Environment. The Office of the Greater Toronto Area has agreed to co-ordinate a meeting of other major external review agencies on the Region's behalf. This is tentatively scheduled for the latter part of February and will include Provincial and Federal Ministries as well as the Conservation Authorities. This meeting will also cover the Lake Simcoe project and the overall Long Term Strategy.

Despite the necessary rescheduling of public information centres, project staff have been assured that the overall schedule for Durham West will not be affected. Completed Terms of Reference are scheduled for submission October, 1998. A project schedule is attached as Attachment No. 5.

#### 4. CONCLUSION

With the completion of the York Optimization Study, a comprehensive long term plan for water infrastructure has been provided. Though confirmation of assumptions regarding supplies from Metro and Lake Simcoe may necessitate revisiting the hydraulic model from time to time, staff will be able to do this in-house. Based on a comparison with the joint study work completed in 1995 with Metro, substantial savings have been likely realized through use of the genetic algorithm technique. That study recommended expenditure within York Region in

Clause No. 1  
Report No. 4  
Transportation and Works Committee

the order of \$157 Million to service up to PD6 alone to the year 2011. Comparable works in the CU Optimization Study total \$102 Million. On this basis, the \$620,000 project cost represented considerable value in capital cost savings.

All of the other three projects are progressing on time and within budget. Current key issues are:

- analysis of the Lake Simcoe versus Durham West source to supplement groundwater in Aurora/Newmarket;
- preparation of the "Scope of Work" Report for the Water Use Efficiency Program; and
- obtaining Public and Review Agency input on the Durham West project.

This report has been reviewed by the Senior Management Group

(A copy of the attachments referred to in the foregoing has been forwarded to each Member of Council with the February 18, 1998 Transportation and Works Committee and a copy thereof is also on file in the office of the Regional Clerk.)

*(Regional Council at its meeting on February 26, 1998, referred the foregoing Clause back to the Commissioner of Transportation and Works for a further submission to Committee.)*



## Lake Simcoe Water Treatment Facility - Class Environmental Assessment

York Region has developed a long-term water supply strategy to serve projected growth to 2031. The need for a new water treatment facility drawing water from Lake Simcoe has been identified as one part of the long-term strategy. The facility would serve the needs of Simco and Keswick and potentially parts of Newmarket, Aurora and Richmond Hill. Work is currently underway to confirm the water requirements and ultimate distribution.

The need for a new Lake Simcoe facility was identified as a result of studies documented in the Georgina Water Supply Class Environmental Assessment, Phases 1 and 2 (January 1996,) and the York Region Long Term Water Project Master Plan (July 1997). More detailed studies will now be carried out over the next eight months to identify and evaluate alternative design concepts for the facility. These studies will be carried out in accordance with the requirements of Phases 3 and 4 of the provincial Class Environmental Assessment for Municipal Water and Wastewater Projects.

The works will include an intake, low lift pumping station, water treatment plant, storage and transmission mains. Potential locations for these facilities were identified in the previous work. Actual locations for proposed works will be determined through this Class Environmental Assessment.

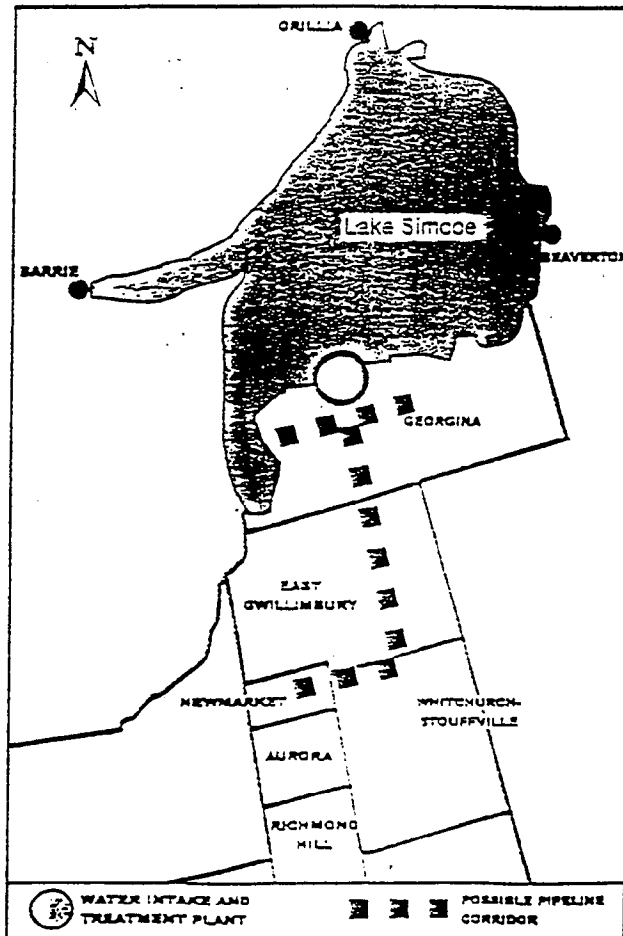
We are very interested in your involvement in this project.

A public and agency consultation process will be conducted for this project. There will be opportunities to meet informally with study team members to discuss your concerns, as well as two Public Information Centres. It is anticipated that the first Public Information Centre will occur in Spring 1998.

For further information on this project, to discuss any questions or comments, or to be added to our mailing list please contact the Long Term Water Project Office, Region of York:

Phone 1-888-YORKH2O (1-888-967-5426) Debbie Korolnek ex. 3015 or Steve Tibke ex. 3065; fax (905)830-6927; mail - P.O. Box 147, 17250 Yonge St., Newmarket, Ontario L3Y 6Z1

Updates on this project will also be available on the Long Term Water Project Web-site at: [www.yorkwater.on.ca](http://www.yorkwater.on.ca)



## Lake Simcoe Water Treatment Facility Completion of Phases 3 & 4 of Class EA

ID	Task Name	Nov '97	Dec '97	Jan '98	Feb '98	Mar '98	Apr '98	May '98	Jun '98	Jul '98	Aug '98	Sep '98	Oct '98	Nov '98
1	Lake Simcoe Water Treatment Facility													
2	Consolidate Master Plan/Georgina EA													
3	Water Quality and Treatment													
4	Lakeshore Modelling													
5	Pilot Plant													
6	Water Demand Review													
7	Lake Simcoe Abstraction													
8	Conceptual Design													
9	Water System Analysis													
10	Land Appraisal													
11	Environmental Impact Assessment													
12	Public Consultation Process													
13	Engineering Predesign & Costing													
14	Environmental Study Report													
15	Address Bump-Up Request													





## NOTICE OF STUDY COMMENCEMENT AND PUBLIC INFORMATION CENTRES

Long Term Water Supply Project Lake Ontario Water Supply

via Durham West. Preparation of Terms of Reference for the Development of an Individual Environmental Assessment

In July of 1997, York Region completed a Master Plan to identify a strategy to meet future water demands. One component of the preferred solution was the requirement for a Great Lakes Supply which will be provided by the Durham West component. Planning for the Durham West component will be undertaken as an Individual Environmental Assessment (EA).

For an Individual EA, the Act requires that a proponent prepare a Terms of Reference (ToR) to define the scope of a proposed EA Study. The ToR require approval by the Minister of the Environment (MOE) and the subsequent EA is then prepared in accordance with the approved ToR.

The ToR is to be prepared during 1998. The intention is to submit the ToR to MOE for a Core Government Review by October 1998. To prepare the ToR, two sets of Public Information Centres are planned to take place, the first in February 1998 and the second in Fall 1998.

The first set of Public Information Centres has now been arranged. The purpose of this set of Public Information Centres is to introduce the study and obtain comments on the scope of work required to complete the EA Study. The Information Centres will be held at:

**Tuesday February 3, 1998**

4:00 p.m. to 9:00 p.m.

Regional Municipality of York  
Administrative Centre, The Great Hall  
17250 Yonge Street, Newmarket

**Thursday February 12, 1998**

4:00 p.m. to 9:00 p.m.

Town of Pickering Civic Complex, Council Chambers  
One The Esplanade, Pickering

**Wednesday February 4, 1998**

4:00 p.m. to 9:00 p.m.

Glad Park Public School, Lunchroom  
300 Glad Park Avenue, Whitchurch-Stouffville

**Thursday February 5, 1998**

4:00 p.m. to 9:00 p.m.

Town of Markham Civic Centre, Canada Room  
101 Town Centre Boulevard, Markham

**Tuesday February 10, 1998**

3:30 p.m. to 8:00 p.m.

Rouge Hill Library  
1340 Rougemount Drive, Pickering

**Wednesday February 11, 1998**

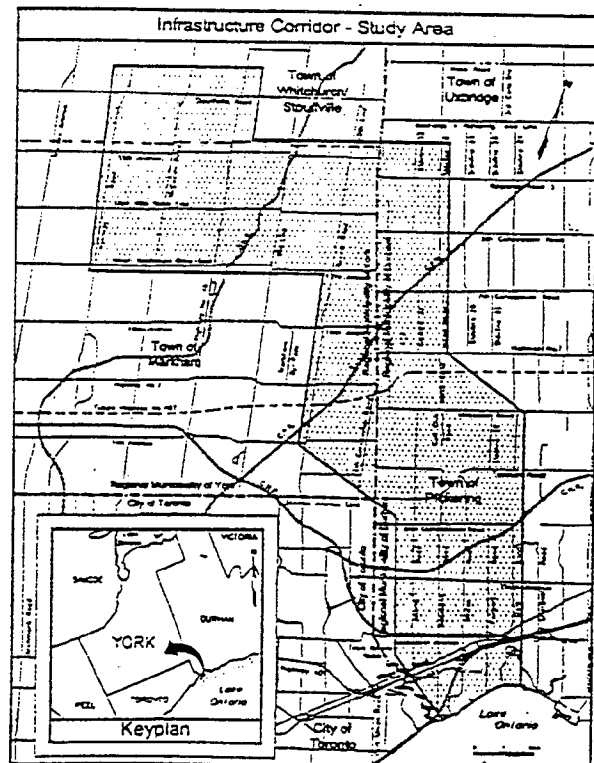
4:00 p.m. to 9:00 p.m.

Pickering Recreation Complex, O'Brien Room "B"  
1867 Valley Farm Road, Pickering

If you wish to receive additional information, please contact:

Philip Bottomley  
Project Manager, Consumers Utilities,  
c/o York Region Long Term  
Water Project Office  
17250 Yonge Street, Box 147,  
Newmarket, Ontario L3Y 6Z1  
Tel: 905-830-4444 Ext. 3064  
Fax: 905-895-6353

Debbie Korinek  
Project Manager, York Region,  
Transportation and Works Department  
17250 Yonge Street, Box 147  
Newmarket, Ontario L3Y 6Z1  
Tel: 905-830-4444 Ext. 3015  
Fax: 905-895-6353





Clause No. 2 embodied in Report No. 6 of the Transportation and Works Committee, which was adopted, as amended, by the Council of The Regional Municipality of York at its meeting on March 26, 1998.

## 2

### LONG TERM WATER PROJECT LAKE SIMCOE WATER TREATMENT FACILITY CLASS ENVIRONMENTAL ASSESSMENT AURORA/NEWMARKET - SUPPLY CONCEPT

The Transportation and Works Committee recommends the adoption of the following report, March 6, 1998, from the Commissioner of Transportation and Works:

#### 1. RECOMMENDATIONS

It is recommended that:

1. the concept of supplementing the groundwater supply for Aurora/Newmarket with a Lake Ontario based water supply be endorsed;
2. staff report back to the Transportation and Works Committee regarding the timing and implementation of capital works to introduce the Lake Ontario based supply to the Aurora/Newmarket area;
3. pending a further report on the implementation of capital works necessary to provide a Lake Ontario supply to Aurora and Newmarket, the available groundwater resource be re-allocated for planning purposes as follows:

	<u>Capacity as Population Equivalent</u>	
	<u>Existing</u>	<u>Proposed</u>
Aurora	43,000	46,700
Newmarket	68,700	72,000
East Gwillimbury	17,400	13,600

and,

4. the Class Environmental Assessment for the Lake Simcoe Water Supply Project proceed on the basis of service to Georgina only.

#### 2. BACKGROUND

##### 2.1 History

The Lake Simcoe Water Treatment Facility project is one of four projects which comprise the Region's Long Term Water Strategy. The main objectives of the

Lake Simcoe Water Treatment Facility project are to replace the aging Sutton water plant and to service growth in the Keswick and Sutton area to 2031. Recognizing that studies conducted on behalf of the Region indicate that the current groundwater resource serving the Aurora/Newmarket area is insufficient for projected 2031 needs, one of the early tasks in the Lake Simcoe project has been to investigate the possibility of drawing additional water from Lake Simcoe to supplement the groundwater supply. Early resolution of this issue is required for two reasons:

1. staff have been advised by the Ministry of Natural Resources that if York Region pursues an intra-basin transfer of water under the Great Lakes Charter it will be necessary to make a technical submission to the Ministry of Natural Resources which includes a comprehensive financial analysis of viable alternatives to the proposal; and,
2. it will be necessary, prior to completion of the Lake Simcoe Environmental Assessment, to define the service area for the water plant.

A complete analysis of the costs and benefits associated with options for additional water supply to Aurora/Newmarket required a cost comparison of capital requirements for supplementing groundwater supply from Lake Simcoe with the alternative of supplementing groundwater from existing and proposed Lake Ontario supplies. These comparative costs were investigated utilizing results of the York Water System Optimization Study completed in January 1998 by Consumers Utilities.

## **2.2 Purpose of this Report**

The primary purpose of this report is to summarize the results of the analysis done to compare supplementing groundwater supplies in Aurora/Newmarket from Lake Simcoe versus Lake Ontario and present recommendations. This report also makes recommendations with respect to the interim allocation of water supply from the common aquifer serving Aurora, Newmarket and East Gwillimbury and provides a brief outline of subsequent steps.

## **3. DISCUSSION**

### **3.1 Cost Comparison of Alternative Surface Water Supplies**

A cost comparison of supplementing groundwater from Lake Simcoe versus Lake Ontario was undertaken by staff of Consumers Utilities and the Region. The following assumptions were used in the analysis:

- Phase 1 of the Georgina plant (for service to Sutton/Keswick) would be operational by 2001
- Phase 1 of the Durham West plant would be operational by 2005

- Supplement to Aurora/Newmarket would be required by 2003/2004 based on an allowable aquifer withdrawal of 51,000 m<sup>3</sup>/d.

Table 1 outlines the comparative costs of required Lake Simcoe supply, Durham West supply and York internal infrastructure for two options.

- Option 1: Aurora/Newmarket groundwater supplies are supplemented with Lake Simcoe water.
- Option 2: Aurora/Newmarket groundwater supplies are supplemented with Lake Ontario water via the existing Toronto and proposed Durham West supplies.

**Table 1**  
**Cost Comparison of Groundwater Supplement from**  
**Lake Simcoe Versus Lake Ontario**

	Option 1 (Lake Simcoe)		Option 2 (Lake Ontario)	
	Total	NPV	Total	NPV
<b>1. Capital Costs to 2031 (\$Millions)</b>				
a) Durham West				
b) Lake Simcoe	320.8		359.4	
c) York Internal	125.9		55.9	
	156.5		187.0	
<b>Sub-Total - Capital</b>	<b>\$603.2</b>	<b>\$295.5</b>	<b>\$602.3</b>	<b>\$290.0</b>
<b>2. Operation and Maintenance to 2031 (\$Millions)</b>				
<b>Total</b>	<b>324.8</b>	<b>86.3</b>	<b>342.5</b>	<b>92.1</b>
	<b>\$938.0</b>	<b>\$381.8</b>	<b>\$944.8</b>	<b>\$382.1</b>

Note: Net Present Value (NPV) was calculated based on 6% interest.

On the basis of the net present value comparison, the total cost of either option is virtually the same.

### 3.2 Other Factors

There are a number of other factors to be considered in evaluating the future source of additional water supply for Aurora/Newmarket. These are discussed below.

#### 3.2.1 Great Lakes Charter

If Lake Simcoe water is conveyed southerly for use in Aurora/Newmarket, the water used in Aurora/Newmarket will not be returned through the sewage system to Lake Simcoe, but will be discharged to Lake Ontario via the York-Durham Sewage system. Based on analyses done for the Region's Water Supply Master Plan, the environmental impacts associated with this intra-basin transfer of water are not

considered significant given the considerably larger variation in water levels imposed through lake level controls. Such a plan would, however, trigger the need for "Prior Notice and Consultation" under the Great Lakes Charter. This process would entail the following steps:

1. It would be necessary to make a technical submission to the Ministry of Natural Resources to document the reasons for the additional taking, including the financial analysis of alternatives and other environmental issues.
2. The Ministry of Natural Resources would complete an internal review in consultation with the Region and other Ministries and would submit the proposal to the Premier's Office.
3. If accepted, the Premier's Office would initiate the formal "Prior Notice and Consultation" process under the Great Lakes Charter by notifying the Offices of the Governors of the respective Great Lakes States and the Premier of Quebec, the appropriate management agencies of the Great Lakes States and Provinces, and, if deemed appropriate by the Province, the International Joint Commission. The notice would include a description of the proposal and provide for a 45 day period for comments and objections.
4. In the event of an objection, the Charter requires that the Province convene a consultation process to investigate and consider the issues involved, and to seek and provide mutually agreeable recommendations. The Province would subsequently notify each affected Great Lakes State or Province of its final decision to issue, including any conditions, or deny approval.

The "Prior Notice and Consultation" process has never before been carried out for a water project in Ontario. If no objections are received, the entire process is expected to take 4 to 5 months. If objections are received or the proposal is rejected by the Province, however, the project could be delayed. This could result in prolonging the Environmental Assessment and approvals process.

### **3.2.2 Compensation to Hydroelectric Power Companies**

In addition to the necessity of completing the "Prior Notice and Consultation" process, York Region could be in a position to negotiate compensation packages with Orillia Water, Light and Power and Ontario Hydro for lost generating capacity as a result of the intra-basin transfer of water. The costs associated with this have not been fully assessed.

### **3.2.3 Environmental Assessment Process**

A number of agencies and members of the public have expressed concern over transfer of water out of the Lake Simcoe watershed, among them Simcoe County and The Georgian Bay Association. While technical studies to date indicate that impacts

are not significant, the time and cost of the on-going Class Environmental Assessment for the Lake Simcoe Water Supply could be increased if these objections result in a bump-up to an individual Environmental Assessment.

### **3.2.4 Project Timing**

Efforts are on-going to rectify taste and odour problems at the Sutton water supply plant via lower cost process improvements. At this time, it is uncertain whether or not these measures will result in sustained water quality improvements. It is possible that, because of the location and shallow depth of the existing intake in Sutton, the only permanent solution is construction of a new intake and/or additional treatment process. If it is not proposed to utilize Lake Simcoe water in the Aurora/Newmarket area, the Environmental Assessment would be a simpler study with less risk of bump-up to an Individual Environmental Assessment. This could permit final design of the first phase of the new plant to commence as early as January, 1999.

### **3.2.5 Results of Evaluation**

Given that the costs of supplementing groundwater supplies from Lake Simcoe are the same as from Lake Ontario, and taking into account all of the factors discussed above, it is concluded that the preferred source for additional water supply to Aurora/Newmarket is Lake Ontario.

## **3.3 Sensitivity of Supply Scheme to Aquifer Yield**

The Yonge Street Aquifer is presently the sole source of water supply to Aurora, Newmarket, Holland Landing, Sharon and Queensville. Previous computer modelling undertaken in 1990 by International Water Supply on behalf of the Region indicated that this aquifer is capable of continuously producing 51,000 m<sup>3</sup>/d. The current Permit to Take Water, which governs withdrawal from the aquifer, allows the Region to take an average of 42,000 m<sup>3</sup>/d. The permit states that re-assessment of the aquifer capability is to be initiated once actual withdrawals reach 38,000 m<sup>3</sup>/d. The 1997 withdrawal was 37,000 m<sup>3</sup>/d on average. This represents a marked increase from 35,000 m<sup>3</sup>/d in each of 1996 and 1995, due mainly to hot, dry summer weather.

If further study indicates that the aquifer is not capable of yielding the expected 51,000 m<sup>3</sup>/d, interim works could be advanced to accommodate demand in Aurora/Newmarket until the Durham West supply is in place and the required ultimate transmission works are installed. The optimization study results indicate that it would be possible to stage supply works even if no more than the current permitted withdrawal of 42,000 m<sup>3</sup>/d can be realized.

City of Toronto staff have suggested that the available water supply from Toronto may be increased from the currently agreed 259,100 m<sup>3</sup>/d (57 MIGD). This

would permit further overall cost reductions by delaying the need for the Durham West supply. This matter is under further review by York and City of Toronto staff.

Terms of Reference will be prepared for re-assessment of the aquifer performance in 1998. The Terms of Reference will be reviewed with the Ministry of the Environment before calling for proposals later in the year. It is expected that the work will be completed in 1999.

### 3.3.1. Allocation of Groundwater Pending Surface Water Supplement

An available groundwater yield of 51,000 m<sup>3</sup>/d has been used for land use approvals in Aurora, Newmarket and East Gwillimbury (Holland Landing, Sharon and Queensville). This represents the maximum potential yield as projected in 1990. While the Province has acknowledged this figure for planning purposes, it has established an upper limit of 42,000 m<sup>3</sup>/d pending re-evaluation of the ultimate aquifer potential.

Recognizing the limits imposed by the ultimate capability of this groundwater source and given the uncertainty, at the time, as to the alternative(s), Council approved an assignment of the available groundwater yield in 1994. The allocations are summarized in Table 2:

Table 2  
Yonge Street Aquifer - 1994 Capacity

	m <sup>3</sup> /d	Equivalent Population
Aurora	18,600	43,000
East Gwillimbury	5,400	17,400
Newmarket	27,000	68,700
<b>Total</b>	<b>51,000</b>	<b>129,100</b>

The 1994 Development Charge By-law amendment included, for the first time, an estimate of the long term costs of providing Regional infrastructure to provide water supply to the Aurora, Newmarket and East Gwillimbury communities reliant upon the Yonge Street Aquifer. The costs were based on Long Term Water Supply - Stage 1 Report. The Water Supply Master Plan completed in 1996 provided further cost detail which has been subsequently refined through a recently completed Optimization study of the Lake Ontario based water system presently serving the south urban areas of the Region (Markham, Vaughan and Richmond Hill). The 1998 Development Charge By-law amendment currently pending will include more detailed costs related to surface water supplies to Aurora, Newmarket and East Gwillimbury. As this report has suggested, it is now likely that additional water supply needs, beyond the groundwater capabilities, will come from Lake Ontario. The required works have been identified in the recently completed Optimization report and are expected to be phased-in to meet the needs, between 2001 and 2007. In the interim, some reconsideration should be given to the groundwater allocations which were last considered in 1994.



The 1994 allocation of groundwater contemplated growth pressures in each community at the time taking into account sewage servicing capabilities. Growth since that time has been somewhat different than projected, particularly in East Gwillimbury where two significant Official Plan Amendments have been subject to Ontario Municipal Board hearings (Holland Landing, OPA No. 60 and Queensville, OPA No. 89). As well, the impact of water metering introduced in Aurora in 1991 has resulted in household consumption being further reduced from figures considered in 1994. Low volume water fixtures mandated in 1996 amendments to the Provincial Building Code are expected to extend the capability of the groundwater source throughout the service area. For these reasons, the total available yield of 51,000 m<sup>3</sup>/d is now expected to service 132,300 persons rather than the 129,100 forecast in 1994.

The resulting re-evaluation of the population equivalent serviceable through the Yonge Street Aquifer is summarized in Table 3:

**Table 3**  
**Yonge Street Aquifer - Revised Allocation**

	<b>1997 Serviced Population</b>	<b>1994 Allocation (Pop. Equiv.)</b>	<b>Proposed Allocation (Pop. Equiv.)</b>
Aurora	38,700	43,000	46,700
East Gwillimbury	9,700	17,400	13,600
Newmarket	61,900	68,700	72,000
<b>Total</b>	<b>110,300</b>	<b>129,100</b>	<b>132,300</b>

The reassessment of the Yonge Street aquifer is expected to be completed in 1999. Terms of reference for the work will be drafted in 1998 so that proposals can be sought from qualified hydrogeologists.

### **3.3.2 Surface Water Supply to Aurora/Newmarket - Next Steps**

Confirming the Lake Ontario source will require that further consideration be given to phasing of works necessary to supply the Aurora/Newmarket area. The Optimization study has considered the extension of the Lake Ontario supply to Aurora/Newmarket and has identified specific projects, costs and proposed phasing to be incorporated in the proposed Development Charge By-law amendment.

The incremental expansion capabilities for Lake Ontario supply, coupled with the existing investment in groundwater sources has the potential for cost effective expansion of the existing water supply. Current projections call for the introduction of surface water supplies by 2007 with reinforcement through additional connections by 2021. The phasing referred to in the Optimization Study suggests incrementally introducing surface water to specific zones (i.e. Aurora and Newmarket are divided

into 7 pressure districts or zones for the purpose of water supply) or, alternatively, blending the surface water with existing groundwater supplies.

The 1997 Water Supply Master Plan reported on preliminary testing for groundwater and surface water compatibility. The results indicated no concerns of any significance other than ensuring that disinfection practices are consistent. This is necessary to avoid taste and odour concerns that can arise when mixing waters disinfected with chlorine and those disinfected with chloramine (a longer lasting but slightly less effective disinfectant resulting from the combination of chlorine and ammonia).

Continued use of groundwater supplies results in cost saving opportunities which will also reduce the impact, potentially to the point of being negligible, on the southern municipalities. All water systems are constructed to meet peak demands which occur throughout the summer periods. Outside the peak periods (i.e. September - May) the south area systems are more than capable of meeting all local demands with considerable additional supply becoming available for the Aurora/Newmarket area. A potential advantage exists through the continued reliance on groundwater supplies, particularly through the June to August peak demand periods. Groundwater levels would recover significantly during the September to May, off peak period, while surface water supplements were available to the area. The available groundwater yield would, therefore be more abundant in the peak summer periods.

A further, more detailed analysis of surface and groundwater blending strategies for the Aurora/Newmarket area will be the subject of a report in the Fall of 1998.

#### 4. CONCLUSION

It is necessary, at this point in the Lake Simcoe Environmental Assessment, to decide what the ultimate service area should be so that the terms of the Environmental Assessment work can be defined and requirements under the Great Lakes Charter can be identified.

Based on the cost analysis outlined in this report, it is concluded that there is very little difference in the cost of supplementing Aurora/Newmarket groundwater supplies from Lake Simcoe or from Lake Ontario. Supplementing from Lake Ontario offers additional advantages such as:

- simplifying the approvals process
- simplifying the Environmental Assessment process
- eliminating the need to negotiate compensation agreements with hydroelectric generating companies

Clause No. 2  
Report No. 6  
Transportation and Works Committee

- strengthening the Lake Ontario based servicing emphasis for urban water and sewer service areas
- providing greater assurance in completing the Environmental Assessment process in a timely fashion so that the Lake Simcoe Water Treatment Facility can be constructed when needed

The timing of works to supplement groundwater supplies in Aurora/Newmarket depends on available aquifer yield. It is appropriate to initiate the aquifer performance re-assessment in 1998 since groundwater withdrawals are approaching the 38,000 m<sup>3</sup>/d trigger as stated in the Permit to Take Water for the Yonge Street Aquifer. In the interim, the projected yield of the Yonge Street Aquifer and its allocation between the municipalities served has been re-assessed in light of planned improvements and reduced consumption relative to that previously estimated in 1994. A further report, detailing the implementation of surface water supply into the Aurora/Newmarket area and impacts on the balance of the service area is expected in the Fall of 1998.

This report has been reviewed by the Senior Management Group.

*(Regional Council at its meeting on March 26, 1998, amended the foregoing Clause as follows:*

*That the report required in recommendation No. 2 include the Town of Aurora's request that the Town's investment in the well based groundwater infrastructure which is now being transferred to northern neighbours be re-invested, so as to expeditiously implement Aurora's Highway 404 water supply initiative which could be co-ordinated with the proposed Wellington Street reconstruction scheduled for the year 2000 and furthermore, such report, is to address any other reallocation issues affecting other Municipalities.)*

Thursday, June 25, 1998

Chair and Members  
Works and Utilities Commission  
C/o Trudi Perrin, Secretary  
Metro Hall  
55 John Street

*Zd*

Dear Ms. Perrin,

### Agreement to Supply Water to York Region

I enclose a copy of a letter I sent to Jack Layton on the issue of water privatization in York Region.

It is vitally important for Toronto to have a clearly defined relationship with any private corporations, as they will automatically be partners in any agreements made. Their agenda may not be the same as those of the city.

I enclosed a substantial amount of documentation for the points I made in this letter to Mr. Layton. I would appreciate it if this could be disseminated among other committee members.

If it is necessary to send a further copy of the package, I will do so.

I hope that any decisions taken will be thoroughly examined, both from the issue of rampant sprawl and dealing with private water companies.

Yours sincerely,

*Jean Martin*

Jean Martin

7 Algonquin Forest Drive  
Newmarket, Ontario  
Canada  
L3Y 4V8  
905-478-2427  
Fax- 478-2427 E-mail- [jp@interhop.net](mailto:jp@interhop.net)

Saturday, June 20, 1998

Mr. Jack Layton  
Toronto Council.

Dear Councillor Layton,

On Wednesday I attended Works and Utilities Committee meeting to listen to the part of the agenda relating to the potential water agreement with York Region. I submitted a letter on the subject.

During the course of the meeting the partnership between York Region and Consumers Utilities, (which is a joint venture between North West Water and Consumers Gas- both private companies) was mentioned. We have many relations in northwest England who were really upset about York becoming involved with this company. They'd had such bad experiences that the company was popularly perceived of as a bad joke. The story of North West Water was widely publicized there! They have quite a record of giving executives exorbitantly high salaries. Also they have a poor record for maintenance and a very poor record of controlling rates for consumers. These points are documented in the enclosed articles. North West Water is now a subsidiary of United Utilities, which has connections with the U.S. corporation, Bechtel.

I enclose some information, as I believe you mentioned you'd like to know about the private company that York Region is dealing with. I believe that water is a public asset and that management should be in public hands and run for the benefit of ordinary citizens, not for the benefit of private profit geared corporations. I don't know just what the private companies' long term agenda is in the context of the rush to privatize. I also do not know the implications of Toronto becoming involved with these corporations. In the paper titled "Water Privatization and Investment Study" one of the main reasons given to people for investing is the steady long- term returns for shareholders. Why then privatize? The public should have these benefits.

It is reassuring to note that this committee has many members who are doing their homework on issues. You're one of them.

Yours sincerely,



Jean Martin

# York Region, 2 firms in partnership to supply water to 1 million people

By BRIAN DEXTER  
STAFF REPORTER

York Region is entering into a public-private partnership, the first of its kind in Canada, to work on supplying water to nine municipalities north of Metro Toronto for the next 35 years.

A consortium made up of Consumers Gas of Toronto and North West Water of Britain will be the region's partner in a project projected to cost at least \$500 million.

Their aim is to boost water supplies to the area — now home to about 565,000 residents — from about 51 million gallons a day to 148 million by 2031, when the population is expected to top one million.

Newmarket Mayor John Cole, chair of the region's water strategy task force, said in an interview that "everything is on the table" as far as new water sources are concerned.

Options include running new pipes to Lake Ontario, Georgian Bay or Lake Simcoe, he said, although the possibility still exists of getting more water via Metro Toronto, which now provides about 75 per cent of York Region's water from its lake-shore plants.

Cole said the consortium and the region will formulate a long-term water strategy over the next year.

The consortium will fund all project costs except two salaries

on the region's steering committee.

Competing bids came from Union Gas of Chatham, with Britain's Yorkshire Water, and TransCanada PipeLines, with Ontario Clean Water Agency.

Two councillors at this week's meeting, Michael DiBlase and Joyce Frustaglio of the City of Vaughan, voted to defer the decision to link up with the consortium headed by Consumers Gas.

DiBlase asked for two more weeks to consider the issue in light of a statement by Graham Stringer, council leader in the city of Manchester, that North West Water's performance in Britain "continues to be poor."

# York Region ponders U.K. water system

By DESMOND BILL  
STAFF REPORTER

York Region is considering taking an English water company as its partner to build and operate a system that would supply most of the region's future water needs.

Three of the region's mayors and three top regional officials are in England this week studying the operations of Yorkshire Water and Northwest Water.

The companies are in the running to be the private-sector partner in a \$500 million project that would create what is thought to be Canada's first public-private municipal water system.

Trans Canada Pipe Lines and the Ontario Clean Water Agency, a government body, form a

third group that has been asked to make a partnership proposal.

York Region, which gets about 325 million gallons of water a day from Metro Toronto and draws water from wells to supply Newmarket and Aurora, has been looking for an alternative source of supply for several years.

Metro can't continue to meet the increasing needs of the region, which will require another 100 million gallons daily by 2031 because of growth in industry and population.

Two of the competing groups have proposed building a pipeline from Georgian Bay that would also serve other communities along the route.

A consultancy firm advising York Region on the proposals

suggested that regional representatives go to England to study the operations of the English companies.

That has led to the visit there this week of Mayors Bill Bell of Richmond Hill, Don Cousens of Markham, John Cole of Newmarket and Lorna Jackson of Vaughan.

The four were warned yesterday by Neil Fishpool, chairperson of the National Campaign for Water Justice in London, that they "would be mad to even consider giving a contract" to Yorkshire Water or Northwest Water.

The two companies were privatized by former British prime minister Margaret Thatcher and Fishpool told The Star in a

phone interview that the results have been disastrous.

"Northwest Water has highest leakage rate, between 32 and 38 per cent, in all Europe," he said. "Yorkshire Water has run out of water."

He added: "I wouldn't want Canadians to experience privatization as we have. Since privatization in 1989, water rates in some places have gone up 40 per cent."

A York Region official said yesterday that the delegation of mayors and officials is "looking at the large privatized water management systems, how they function, how they're financed. It's a matter of checking out the operations, seeing how they operate."

T.O. Star March - 1996

## THE PROBLEMS WITH PRIVATIZING WATER: Private companies rife with corruption, incompetence

By Jan-Willem Goudriaan and David Hall

Public Services International (PSI), with over 480 affiliates worldwide, representing 20 million workers in public services including health care, energy, waste and water, is concerned about the continuing deregulation and privatization of essential services such as water. To monitor what was happening, PSI commissioned research from the UK-based Public Services Privatization Research Unit (PSPRU).

The results of this research are more alarming than was expected. This article concentrates on the water industry, but is only a summary of the wealth of detail that is available. Those interested in more of the research carried out by the PSI and PSPRU on these matters may wish to visit the PSPRU's web site at [www.pspru.org](http://www.pspru.org), where they will find much more information on the problems of privatization and the companies involved.

---

Canadian public authorities are now looking to privatize their water and/or sewage systems. This means that they are offering a vital public service to:

- \*a very small group of closely-knit, cartel-prone multinationals with recent records of corruption, incompetence, and rejection by other municipalities who finance investment through higher prices for consumers, and generate dividends from job cuts;

- \*private companies whose accountability is more to their shareholders than to the public.

### The multinationals

The water industry has a handful of multinationals. Unusually, none of the main ones are North American. The world of privatized water is overwhelmingly dominated by two French multinationals, Generale des Eaux and Lyonnaise des Eaux. These huge groups run private water concessions in France, and also in Spain, Italy, the U.K., and some cities in central and eastern Europe. They now have major operations in every continent--e.g., in Buenos Aires, in Adelaide, in Casablanca.

A third French company, SAUR, owned by the construction company Bouygues, is also present in many countries, but is not as large as the others. A Spanish company, Aguas de Barcelona, is also internationally active, mainly in Latin America; it is itself 24% owned and effectively controlled by Lyonnaise des Eaux.

The U.K. Conservative government created 10 private water companies in 1989, but only a few have any significant presence outside the U.K. Thames Water has acquired a number of concessions, mainly in Asia; United Utilities (formerly known as NorthWest Water), which has an international alliance with the U.S. construction company Bechtel, has gained a few contracts, mostly in North America; Hyder (formerly Welsh Water), Anglian Water and Severn Trent also have one or two overseas contracts.

All of the French groups are also present in the U.K. Lyonnaise des Eaux now owns Northumbrian Water, which it took over in 1996. All three French companies own all or part of some of the smaller U.K. water-only companies.

### **Presence in North America**

There are no true independent North American water multinationals. Nor are the European multinationals well established in the U.S., where privatization of water and waste water is still on a relatively small scale.

The three French companies all have operations in North America.

United Water Resources (UWR) is 26% owned by Lyonnaise, and together they run a joint venture, JMM-OSI, which has the sewage contract in Indianapolis. Lyonnaise's presence in Canada, with operations in Banff and Edmonton, is via this U.S. joint venture. Air and Water Technologies (AWT) of the U.S. is 42% owned by Generale des Eaux.

SAUR operates in Canada through Aquatech, which is present in Quebec.

There are some subsidiaries of the U.K. companies, which have so far made little impact. Severn Trent Environmental Services (STES) is owned by Severn Trent; U.S. Water is a joint venture between United Utilities of the U.K. and Bechtel; Anglia-American Water Company is a joint venture between Anglian Water and the American Waterworks Company; Canadian Clean Water is another joint venture between Yorkshire water and Ogden. There are two independent U.S. companies.

The waste management conglomerate, WMX Technologies, has some interests in water, both through its Wheelabrator subsidiary in North America, and through a small 20% shareholding in Wessex Water, one of the less active U.K. companies.

A Colorado engineering company, CH2M Hill, is a partner in TAP, which already has operations in Halifax.

### **Other sectors**

The French companies are not just water multinationals. They are large international companies in other public services and utilities. Water, however, is the most profitable business. Their other interests include:

**\*Waste management and garbage collection** - The French companies Sita, owned by Lyonnaise des Eaux, and Onyx, owned by Generale des Eaux, are in the top five waste management multinationals, along with the North American trio of WMX Technologies, BFI, and Laidlaw.

**\*Energy** - Both Lyonnaise and Generale are investing heavily in energy, including waste-to-energy plants and independent power generation. Generale des Eaux has high hopes for its subsidiary Sithe, especially in the U.S., where it has formed a joint venture with the Japanese giant Marubeni. SAUR is 23% owned by Electricite de France, the French state-owned energy utility which is the biggest electricity multinational in the world. SAUR



and EdF are especially active in Latin America.

**\*Communications and media** - Generale des Eaux, Lyonnaise des Eaux and Bouygues all have subsidiaries which run television channels, cable TV networks, and mobile telephones; and they are now bidding to run telephone networks. Generale des Eaux is a partner in the BT/MCI international alliance.

**\*Construction** - The French groups are also some of the world's largest construction companies. Lyonnaise des Eaux, for example, were involved in building the bridge to Prince Edward Island. They also own specialist water engineering companies: Generale own Kruger and OTV, Lyonnaise have Degremont.

**\*Other services** - These include public transport; car parks; prison management; school and hospital catering.

### Competition

Competition is supposed to be the mechanism by which the benefits of privatization are realized. But it is not a concept which the water companies are very familiar with.

All the English water companies, for example, were given a regional monopoly for 25 years by the Thatcher government in 1989, without having to compete against each other or anyone else for the privilege. In France, nearly 80% of the water business is now shared between the three big companies. European Union legislation on competition has so far given exemption to water supply, so the home markets remain protected.

When concessions are advertised for competition outside Europe, the water multinationals often form joint ventures in a series of fluid partnerships which reduce the amount of competition still further. In Argentina in 1993, for example, the concession for Buenos Aires attracted two bids—one from a consortium which included Lyonnaise des Eaux, Generale des Eaux, Aguas de Barcelona, and Anglian Water. Thames Water was left to put up the other bid, which failed.

In 1995, when South Australia advertised a water concession, Thames Water went into partnership with Generale des Eaux, and won against a competing bid from Lyonnaise, who were partnered by the British shipping conglomerate P&O. Thames were even more delighted because at the same time they won a concession in China, this time in partnership with P&O themselves.

In other sectors, the companies have also been known to operate cartels and participate in joint ventures. Generale des Eaux, for example, was fined in 1995 for operating a cartel in bidding for refuse collection contracts in the south of France.

On major construction projects, the groups often work together—on the Channel Tunnel, for example. The new French national stadium in Paris has been built, and will be operated, by a joint venture which is equally owned by Lyonnaise des Eaux, Generale des Eaux, and Bouygues.

### Problems

The recent history of the water multinationals is full of all kinds of problems, court cases and rejections. The three major issues are corruption, competence, and rejection.

### Corruption

Since June 1994, French magistrates have been investigating numerous allegations of corruption used by large companies to win public sector contracts. Executives of both Lyonnaise des Eaux and Generale des Eaux have been convicted of corruption, and further cases are pending. In mid-1996, no less than five out of 13 directors on the main board of Generale des Eaux were under investigation for corruption (mostly in connection with their jobs with other companies). Similar allegations and convictions of bribery and corruption have occurred elsewhere in the world, and not only with the French companies.

### Competence

For the U.K. companies, the overwhelming issue has been incompetence. Yorkshire Water so badly failed to maintain its network that in 1995-1996 it was forced to hire a vast fleet of trucks for months on end to get water to major towns. Nearly all other companies have also had problems in maintaining supplies, or avoiding pollution, or both. The English water companies have done more to undermine support for privatization than any other group in the country.

Most English people react with astonished disbelief when they hear that public authorities in other countries are seriously considering inviting the U.K. water companies to manage their systems.

*Correct!*

### Rejection

In many parts of the world, there have been successful local campaigns against privatization of water and sewage. In 1995, the town councils of Lodz in Poland and Debrecen in Hungary rejected privatization proposals from the French multinationals. In both cases, trade unions drew up clear alternative financing proposals. The councils then decided that they could carry out the necessary investment more cost-effectively by themselves. Elsewhere, in Aguas Calientes, Mexico, and Tucuman province, Argentina, local political reaction against water privatizations forced the companies into making drastic cuts in the price of water.

### The economics of water privatization

Neo-liberal politicians argue for privatization on the basis of the theoretical benefits flowing from competition, and pay little attention to empirical evidence. **Reality does not support their views.**

### Efficiency

Municipal water companies in Sweden provide a cheaper service than their privatized counterparts in England, according to a study carried out by consultants. The only area in which the U.K. companies performed better was in the rate of return on capital.

## Prices

Privatization does not make prices lower. It just takes the responsibility away from politicians. In the U.K., water prices have risen far faster than inflation since privatization—partly to pay for investment, and partly to fund dramatic increases in dividend payments.

In France, recent privatizations have had similar effects on costs. In St Etienne, where the council handed over the concession to a joint venture of Lyonnaise and Generale in 1990, prices rose from 3.52 francs in 1990 to 8.50 francs in 1996.

In other places where water has been privatised--Rostock in Germany, Tucuman in Argentina, Pecs in Hungary, Limeira in Brazil, Gdansk in Poland, Aguas Calientes in Mexico--prices have risen sharply after privatization. In some cases where this has not happened--e.g., Mexico City, because local politicians blocked it--the companies complain they cannot do the job properly.

## Investment

The reason for this is that price rises are the key to financing the investment (and profits) of the multinationals. In most countries of the world, there is a genuine need for large-scale investment in new or improved water and sewage systems. The multinationals claim that they can raise the large sums of money more easily, and finance them more cheaply, than municipal authorities can.

In practice, whatever the source of the loans, the consumers are the ultimate source of the repayments of those loans, with interest. Moreover, the companies do not on the whole invest their own equity. In Buenos Aires, held up as one of the great examples of privatization, a \$1 billion investment program was undertaken by the Lyonnaise-led consortium--yet 97% of the finance came from loans raised by the World Bank and by Argentine Banks. The companies put in virtually no new capital at all.

This is why advocates of publicly-run water systems in Lodz, Poland, and Debrecen, Hungary, were able to demonstrate a convincing financial case. The municipalities can borrow money from international funds and banks, often at a better rate of interest, and without the need to make a profit for shareholders.

Even in eastern Europe, they may be able to command more favourable interest rates than the multinationals. As the table shows, even AWT, the U.S. arm of Generale des Eaux, which recently won a water concession in Bosnia, has a worse credit rating than Romania, and considerably worse than Slovakia or even the small Czech municipality of Ostrava.

## Profits, jobs and workers' rights

The companies invariably manage to make new concessions profitable. The key method they use is to cut jobs. In Buenos Aires and South Africa, in Indianapolis and Adelaide, in Manchester, Carlsbad and Gdansk, the number of employees and the pay-bill have been reduced--and the dividend payments increased. The English companies in particular have also enriched the company directors, whose salaries are now a national scandal.

Two examples from different companies in different continents:

The English company United Utilities was formed in 1995 when North West Water took over its local electrical utility, Norweb. It then announced that it was getting rid of 2,500 jobs, in order to cover the costs of the takeover and the dividend increases that had been promised during the takeover. It also tried to oust the trade unions, but backed down after international protests.

At the same time, in Cartagena de los Indias, in Colombia, over 500 employees of the public water company were sacked when the concession was privatized to Aguas de Barcelona. They were given no rights to transfer, and the company did not negotiate with the union.

### Long-term consequences

There are long-term consequences which are rarely considered. Local authorities often see the sale of a water utility as a way of generating some much-needed cash for short-term projects. This may be doubly shortsighted. If the utility can be run to generate a surplus, then that surplus will no longer be available to the municipality in future. Moreover, in an era when fiscal deficits are being politically constrained all around the world, the apparent immediate cash bonanza of the sale may be rapidly offset by a deterioration of the authority's deficit, due to the loss of the utility's surplus.

Finally, it is hard to reverse a decision to privatize such a service. The authority loses its own expertise, and no longer has direct access to financial information and understanding. The company is in a very strong position to keep the concession regardless of the public interest.

An extreme example of this is the Spanish town of Valencia. In 1900, it privatized its water system, on a concession that was supposed to run for 120 years. In 1994, the city felt that it would like to test the market, to see if it was still getting value for money. The water company, Aguas de Valencia, which is today part the Bouygues/SAUR group, responded by threatening to sue the city for 26 years' loss of earnings if they awarded the new contract to any other company. Negotiations took place—and the upshot was that the city backed down and Aguas de Valencia retained the contract.

**(Jan-Willem Goudriaan is a research officer with Public Services International in France. David Hall is a researcher with the Public Services Privatization Research Unit in Britain.)**

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Taken from The CCPA Monitor April 1997.  
[Back to Sample Articles from The Monitor](#)

**CUPE****Anti-Privatization Database****United Utilities****SUMMARY**

Involved in privatized water, waste water, electricity, gas supply and telecommunications. Its subsidiary, North West Water, is one of world's largest private water and waste water companies.

**CEO:** Sir Desmond Pitcher

**Salary/Bonus:** \$761,200

**Worldwide Revenue:** \$4 billion (1996)

**Worldwide Profit:** \$1.02 billion (1996)

**Worldwide Number of Employees:** 10,237 (1996)

**Corporate Outlook:** Gordon Waters, United Utilities' International Division Managing Director: Water is "the next biggest worldwide market after power generation." While people can live without electricity, everyone has to have water."

**Corporate Record:** During the 1995 drought in England, North West Water imposed rotating water cutoffs and raised water prices.

4/97



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December 1994 Executive Summary of Report on Investment Opportunities for Electric Utilities in Water and Wastewater

# WATER PRIVATIZATION AND INVESTMENT STUDY

Brian Browne



Profits  
to be  
made.

## Executive Summary

Many U.S. investor owned electric utilities companies have been pursuing investment diversification programs. These ventures have been in both traditional and non-traditional areas of operation.

The main catalysts for these diversification programs have been capital accumulation from plant rate base depreciation coupled with a decrease in investment opportunities for traditional electric utility plant. Electric utility core market share has been eroded due to the proliferation of independent power producers (IPPs) and cogeneration plants, the implementation of demand side management programs, technological changes, shifts in regional economic changes, triggered by global competition and the recent economic slump. These factors have contributed to a "crowding out" effect of the historical investment areas for investor owned electric utilities.

Out of economic necessity, local governments will most likely turn increasingly to private sector financing of water and wastewater facilities. Private sector involvement will vary from outright purchase of publicly owned water and wastewater facilities to degrees of public-private shared partnerships. Whatever the ownership format, diversification opportunities in water and wastewater industries for investor owned utilities should be available.

There are numerous foreign and domestic models of water and wastewater privatization, which suggests how the U.S. water industry might re-structure. In the U.S., the example of Minnesota Power and its Florida subsidiary, Southern States Utilities (SSU) stands as a successful example of how a company, with diminished traditional core customer base, mainly due to foreign steel imports and a weakened local economy, was motivated to seek alternative utility investment opportunities in private water companies. Initially a combination of six small Central Florida companies were rolled up into Southern States Utilities (SSU). SSU has grown to a water/wastewater company with nearly 150 systems serving 160,000 customers and employing over 500 people.

In recent years, particularly in the U.K. and France, privatization of water and wastewater facilities has been the solution of choice in providing quality services without placing additional hardships on the public purse. A number of other countries, most notably Australia in 1992, have turned to the private sector for financing in providing safe and environmentally sound water/wastewater services.

In-house staff and operating experience will prove beneficial to electric utilities involved in the water industry. Investor owned water and wastewater facilities in the U.S. are subject to similar regulatory controls as those which govern the electric utility industry. The experience base of investor owned electric

utilities of operating in a regulated environment will be an enhanced managerial attribute for the acquisition and operation of water and/or wastewater facilities. The ready transfer of management and operating skills and relatively low learning costs related to acquiring and operating a water or wastewater facility versus a completely new competitive investment, could provide electric utilities with a potentially attractive investment opportunity.

In addition to the operating synergism, water and wastewater facilities are low risk, high capital requirement enterprises, which may be well suited to electric utility investment strategies. The regulatory control of the water and wastewater industries ensures, in degree, a guarantee of market share and full cost recovery, through commission supervised rate designs. Electric utility water/wastewater facilities will provide, within their own service areas, additional economies in the form of a highly correlated customer base, in-depth knowledge of the local regulatory environment, and an understanding of the many nuances of the local economy.

There is already a very viable investor owned water utility industry in the United States. This industry has, on aggregate, provided investors with rates of return on investment and stock appreciation that have equalled or outperformed many other market sectors, including other utilities.

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#### 1993 Average Annual Total Shareholder Return (%)

- Water Utilities 27.17%
- Electric Utilities 19.30%
- Natural Gas Utilities 12.17%
- All Utilities 16.46

*See text for additional financial factors*

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Electric utility investment in the water and wastewater industry should also have a complementary impact on local economic growth. Expansion on an electric utility's customer base can be enhanced or constrained by the availability or lack thereof of water and wastewater facilities. Thus an investor owned electric utility, by investing in the water and wastewater infrastructure of the service area community, 1.) be making a prudent, stand alone investment and 2.) encouraging community economic growth and hence, in the longer-term, an expansion of its traditional electric customer base. These ripple or secondary effects will increasingly be an incentive for electric utilities to consider investment in water and wastewater facilities, especially in their own service areas.

Other findings of this brief study were:

Currently water systems appear to be more attractive (easier to enter) investments

Rate shock (caused by regulatory driven investments) experienced by some investor owned water utilities has led to customer pressure for public annexation.

A critical issue in public systems is the cross subsidization of using taxes to obscure the true cost of services to customers.

Other issues that need to be considered are corporate structures, including the issues of public-private partnerships

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## The Parent Companies

IWL is an industry leader in the international water project development arena. The successful global partnership between Bechtel and NWW ensures that IWL will provide creative solutions, harness state-of-the-art technologies and offer a total service package at competitive prices.

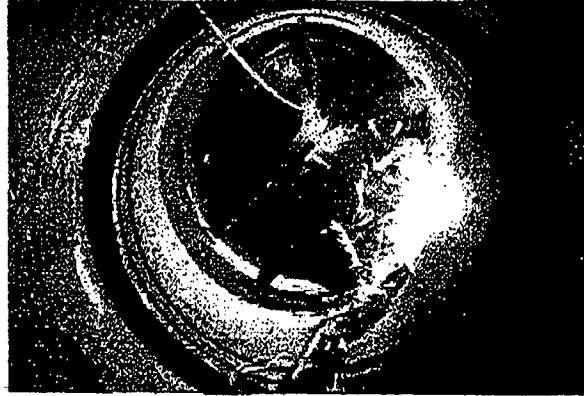
## NORTH WEST WATER



- Part of United Utilities, the U.K.'s first multi-utility company providing water and wastewater, electricity, gas and telecommunication services nationally and internationally.
- One of the world's largest water and wastewater enterprises, employing 8,000 people and serving approximately 28 million people worldwide.
- Operates and maintains water utility assets in six countries, including over 1,000 wastewater treatment works, over 200 water treatment works, over 42,000 km of water mains and over 40,000 km of sewers.
- Expertise includes analysis and development of optimum operations solutions, resulting in the most cost effective operation and maintenance of water facilities to meet customer and regulatory requirements.
- Examples of NWW's global successes include: the first build-operate-transfer (BOT) water project in the world, at Ipoh, Malaysia; the Yan Yean water treatment plant in Melbourne, serving 300,000 people; the Macarthur water treatment plant in Sydney, serving 500,000 people; the first wastewater facility and a 50 km sewer network in Bangkok for 700,000 people.



# BECHTEL



- One of the world's premier engineering, construction and project management companies, employing some 28,000 people on 1,000 projects in 65 countries.
- At the centre of water infrastructure development since the 1920s, having built more than 300 water and wastewater treatment projects and laid more than 80,000 km of pipeline.
- Global experience includes more than 15,000 projects in 140 countries on all 7 continents.
- Bechtel Enterprises, its development, finance and ownership subsidiary, has arranged or participated in more than US\$ 10 billion worth of project financing since 1990.
- Bechtel Water Technology (BeWT) provides IWL with the technical resources to meet the complex water needs of residential and industrial customers, as well as project management, engineering design and materials procurement and construction management services.
- BeWT is implementing a US\$ 6 billion improvement program to modernize and improve the environmental systems of NWW's infrastructure assets in the UK.
- U.S. Water, a joint venture between Bechtel and NWW, is responsible for the partnership's water and wastewater privatization business in the United States, Canada and Mexico, with 30 active contracts for the operation of 40 municipal and industrial water and wastewater facilities.

[Bechtel's home page.](#)



[Introducing IWL. Service Options. Worldwide Projects. Addresses. What's New!](#)



## Introducing IWL



International Water Limited (IWL) is a full service company that is uniquely qualified to manage the most difficult and complex water infrastructure projects to the highest standards. Headquartered near Manchester, England, IWL was created in 1996 by combining the strengths of North West Water and Bechtel Enterprises to form one of the most effective companies in the world.

Together, North West Water (NWW) and Bechtel provide an extraordinary depth of experience in the technical development and management of water and wastewater projects.

The ability to draw on its parent organizations' expertise and resources gives IWL more than 100 years of world-wide experience on some of the most challenging infrastructure projects.

IWL provides a full range of service options:

1. Operations and maintenance
2. Engineering, procurement and construction
3. Project development and financing services
4. Ownership and asset management

 Parent Companies, Service Options, Worldwide Projects, Addresses, What's New!

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## Water investors set for record dividend

By Antony Barnett, Industrial Correspondent

Sunday May 24, 1998

Shareholders in Britain's water companies are expected to receive dividends worth a record £850 million this year - taking their total since privatisation in 1989 to more than £9 billion.

Analysts predict that the water companies, which start reporting on Wednesday, will raise their dividends by 12 per cent this year. Dividends in the stock market as a whole have risen by around 8 per cent.

Since privatisation, water bills have doubled.

Peter Bowler of Waterwatch said the dividend increase "makes nonsense of the water companies' arguments that bills will have to go up if they are to meet their environmental obligations".

This year's double-digit increase will come despite relatively flat profits this year. The eight companies are forecast to have made just over £2bn last year.

The results come as the industry awaits water regulator Ian Byatt's next price review, which will cover water bills for the first five years of the next century.

Byatt has argued that dividend growth should be kept to around 2 per cent. Analysts expect him to call for a one-off cut in customers' bills of 15-20 per cent when his review is published later this year.

Nigel Hawkins, utilities analyst at Williams de Broe, said: "The companies will do all they can to play down profits in the hope that Byatt does not hammer their earnings."

Anglian Water kicks off the reporting season on Wednesday; it is expected to raise its dividend by 13 per cent to 38.9p a share. Also reporting next week are South West Water, Yorkshire and United Utilities.

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