CITY OF TORONTO

COMPLIMENTS OF

PETER TABUNS
City Councillor - Ward 8
City Hall, Toronto, Ontario M5H 2N2

To

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Recommendations:

1. That a copy of this report be forwarded to the Metropolitan Toronto Corporation for consideration by the Municipal Co-ordinating Committee on Water Conservation (MCCWC); and

2. That the Metropolitan Corporation be advised that the City would be pleased to participate in the MCCWC and assist in the development of Metro wide water conservation programmes.

Background:

Your Committee, at its meeting of January 15, 1992, in considering my report dated July 10, 1991 entitled, "Avoidance Cost - Water Conservation and Disconnection of Downspouts" (Clause 91 in Executive Committee Report No. 24), and the report entitled, "Water Conservation Strategy", adopted by the Council of the Municipality of Metropolitan Toronto at its meeting of September 25, 1991 (Clause 9 of the Metropolitan Toronto Works Committee Report No. 19), requested that I report on:

(a) The recommendations contained in Clause 9 of Report No. 19 of the Works Committee adopted by the Municipality of Metropolitan Toronto at its meeting of September 25, 1991; and

(b) The Water Conservation Strategy Report dated May 31, 1991 prepared by R. V. Anderson Associates Limited.

Comments:

1(a). <u>The Water Conservation Strategy Report Prepared by R. V. Anderson Associates Limited</u>

In November, 1990, the Metropolitan Toronto Corporation engaged the consulting firm of R. V. Anderson Associates Limited to undertake a study and prepare a report on an assessment of the impact of a comprehensive water conservation strategy for

Metropolitan Toronto, including the assessment of the short and long term impacts of water conservation on Metro's water supply and wastewater treatment facilities, the determination of feasible water conservation targets for Metro, the identification of the net impact of conservation and "demand management water pricing", the funding for the operation, maintenance and renewal of infrastructure, and the development of an outline for a comprehensive water conservation strategy.

This study was initiated in order to address the following concerns:

- Lake Ontario is not an unlimited resource for fresh drinking water;
- governments are facing fiscal restraints;
- there is a need for infrastructure replacement and expansion to accommodate population growth; and
- there is a growing concern for the environment.

The consultant completed its report in early 1991 and the final report was issued on May 31, 1991.

The consultant concluded that by implementing water efficiency measures and a conservation strategy and by applying a demand management approach, water consumption should reduce and there should be a net gain in revenues for the Metropolitan Toronto Corporation because the costs for maintenance and operation, as well as the need for expansion of water and sewage infrastructure facilities, should decline. The consultant identified several target conservation goal scenarios and predicts that, with the implementation of specific conservation measures and management techniques, coupled with a significant increase in water rates, a total reduction in water use of between 6% to 10% by the year 2001, and 13% to 23% by the year 2011 could be achieved.

Notwithstanding the above findings, the consultant recommends that the planning, design, and development of the Metropolitan Toronto water and sewage infrastructure should not be reduced until there is clear evidence that the conservation measures are working. For example, current expansions to Metropolitan Toronto's water filtration capacity should proceed as planned, however, further capital expansions may be unnecessary or delayed well into the future.

The consultant suggests that, while Metro's water supply and water pollution control operates on a user pay, but non-profit basis, there is a need to expand the scope of programmes that can be

funded from the revenue generated by their rate structure. Specifically, and as recommended in the Federal Water Policy, the funds should be made available to cover specific environmental, education, and water resource depletion and "clean-up" costs, such as research and development of new water and wastewater treatment technologies, acceleration of remedial measures planned for the Toronto Area Waterfront, such as reduction and treatment of overflows from combined sewer systems, and the development and implementation of public programmes related to water conservation and environmental protection issues.

Furthermore, an expansion of the user pay principles to full recovery of all capital and operating costs for upgrades and improvements to the aging water supply and wastewater facilities through the provision of appropriate reserve funds is also recommended.

Overall, the consultant concludes that Metro's water consumers will face significant price increases over the next twenty years, the extent of which must be determined by rate setting studies.

The highlights of the R. V. Anderson study recommendations, as listed in the Executive Summary of the report, are as follows:

- Adoption of a Metro-wide conservation policy to increase efficiency and promote environmentally and economically sustainable development through water conservation practices; the goal being to reduce community demands on water and energy resources. Such a policy should be endorsed or adopted by the Area Municipalities;

- Introduction of regulatory measures, such as requirements for water efficient fixtures in new dwellings, preferably at the Provincial level through the Ontario Plumbing Code, but alternatively within the Area Municipalities of Metropolitan Toronto through appropriate development agreements;

- Promotion of voluntary reductions through measures such as user habit changes, use of water saving devices, and restricted lawn watering;

- Industrial sector analysis to identify high volume users and types of water-use industries, as a first step in setting up pilot programmes in Metro for each sector;

- Water use reduction measures within industrial, commercial, and institutional sectors such as employee education programmes, retrofits, water audits, and pilot programmes to reuse and recycle;

- Implementation of a Metro-wide public information, consultation, and education programme in co-operation with the Area Municipalities and the Boards of Education. A community awareness programme on demand management principles is also included;

- Adoption of an appropriate pricing policy, including endorsement of full user pay concepts, Provincial leadership in a rate setting policy to ensure relatively uniform rates across the Province, and a specific rate setting strategy for Metropolitan Toronto in co-operation with the Area Municipalities;

- Identification of a time frame for the user pay principle to be implemented within all Metro Area Municipalities, as some municipalities are still operating off the tax base, to some degree, for water pollution control revenues (i.e. Scarborough, Etobicoke, and York);

- Establishment of an appropriate water conservation task force, including representatives of the Area Municipalities, Metropolitan Toronto, the public, and other levels of government, depending on the specific task force mandate;

- Designation of staff or creation of new staff positions within Metro Toronto to be devoted to water conservation efforts; and

- Official Metro Toronto endorsement of universal metering and request for full metering within all Area Municipalities within a designated time frame. The potential for more immediate implementation of universal metering within the City of Toronto should be investigated.

1(b). Comments on the R. V. Anderson Associates Limited Report

I am in general agreement with the R. V. Anderson report and have the following specific comments:

1. Although I have not carried out a detailed evaluation of the potential for water conservation and possible water reduction targets, the proposed targets of 6% to 10% reduction by the year 2001 and 13% to 23% by the year 2011 are, in my view, realistic;

2. Given that the availability of adequate water supply and sewage treatment is not only essential for the existing community but also a prerequisite to allow further

residential, commercial and industrial development in Metro, including the City of Toronto, I support the recommendation that the planning, design and development of current expansion requirements should proceed without reducing water consumption criteria in anticipation of achieving water conservation goals. Of course, once evidence of the actual magnitude of water use reductions is apparent, future expansion of water supply and water pollution control facilities can be reconsidered, taking into account the magnitude of actual reductions and anticipated development in the Metropolitan Toronto area;

3. Metropolitan Toronto's charge for water to area municipalities has increased by 30% over the four years from 1987 to 1990. The consultant concludes that water conservation will result in savings with respect to operation, maintenance and capital expenditures, and one would anticipate that this will stabilize the rapid increase in water rates experienced over recent years. However, the consultant suggests that the scope of programmes supported by water rates be expanded to cover specific environmental, education, water resource depletion and clean-up costs, and that the user pay system be further expanded. Accordingly, the consultant states that a significant increase in water rates over the next twenty years can be anticipated.

   Availability of affordable water is a basic human requirement and is also necessary if additional commercial and industrial development is to be attracted to the City. While I fully support a user pay system for water supply (as already exercised by the City of Toronto), I am concerned that significant increases in water rates, as a result of expanding the scope of programmes funded from water rates, may adversely affect the affordability of water to our citizens and jeopardize the continued growth of commercial/industrial development in the City;

4. The consultant's specific water conservation proposal is generally consistent with the water conservation plan being pursued by my Department as approved by City Council.

   As your Committee will recall, on June 25 and 26, 1990, City Council adopted my report on a Water Conservation Programme (Clause 51 in City Services Committee Report No. 9, contained in Executive Committee Report No. 17), which includes a number of initiatives such as the Universal Metering Programme, the Water Conservation

Programme for New Development, Water Audits for Commercial Consumers, Education and Public Relations Programmes, and the introduction of Water Efficient Plumbing Fixtures.

In the meantime, most of these initiatives have been implemented or completed and it is generally recognized that the City of Toronto has become a leader in the promotion of water conservation efforts in the Province of Ontario; and

5. The consultant has recommended the establishment of a Water Conservation Task Force, including representatives of the Area Municipalities, Metropolitan Toronto, the public, and other levels of government. In this regard, the Metropolitan Toronto Commissioner of Works has scheduled the inaugural meeting of this Task Force, named 'Municipal Co-ordinating Committee on Water Conservation' (MCCWC), for February 20, 1992 and has invited representatives from the City of Toronto Department of Public Works and the Environment, Finance Department, and Planning and Development Department.

I expect that the MCCWC will provide the necessary vehicle to achieve a better co-ordination of water conservation initiatives between Area Municipalities, Metropolitan Toronto, and the Provincial Government. Furthermore, the MCCWC will also provide a forum to discuss with Metropolitan Toronto representatives any concerns and comments with respect to the findings and recommendations contained in the R. V. Anderson report, such as my comments listed under Items 1(b) and 2 of this report.

2. Comments on the Recommendations contained in Clause 9 of Report No. 19 of the Works Committee, adopted by Metropolitan Toronto Council on September 25, 1991

My comments with respect to the recommendations contained in the above report are as follows:

Recommendation No. 1 - The Water Conservation Strategy Report dated May 31, 1991, prepared by R. V. Anderson Associates Limited, be received.

No comment.

Recommendation No. 2 - The Strategy Report be forwarded to the MCCWC, the area municipalities, the Region of York and the Ministry of the Environment for review and comment.

My comments on the strategy contained in the R. V. Anderson report are included in this report. Accordingly, a copy of this report should be forwarded to the Metropolitan Toronto Corporation.

Recommendation No. 3 - Metropolitan Toronto initiate the development of a programme of public education to promote water conservation in consultation with the MCCWC to achieve a volume reduction of between 13 and 23 percent by the year 2011 as outlined in the Strategy Report.

I am in support of a programme of public education to promote water conservation. As part of my Department's water conservation programme, a water conservation education curriculum is currently being piloted in the Grade 4 to 8 classes of the Toronto Board of Education and the Metropolitan Separate School Board. I would expect that, through the MCCWC, a co-ordinated education programme for all school boards in Metropolitan Toronto will be developed.

With regard to the proposed water use reduction predictions of between 13% and 23% by the year 2011, I have commented on this issue above in connection with the R. V. Anderson report.

Recommendation No. 4 - Metropolitan Toronto proceed to prepare estimates of the costs of a conservation programme including staff, retrofit devices and universal metering and discuss with the MCCWC alternative means for either providing residents with water conservation retrofit kits or informing residents of the benefits of installing and maintaining retrofit kits.

As stated earlier in this report, my Department already distributes water conservaton kits to the homes of children participating in the water conservation education curriculum and to homes converting to water meters.

I am in support of this recommendation and I intend to work actively with the MCCWC to promote it as much as possible.

Recommendation No. 5 - Metropolitan Toronto expand initiatives to progressively audit, retrofit and monitor Metropolitan owned and operated facilities with water conserving devices to establish more reliable information on the actual impact of conservation devices and habits.

I am in support of this recommendation and note that I am already undertaking water audits for selected major industrial/commercial consumers in the City. As part of the water audit programme for industrial and commercial water consumers, I intend to consult with the Commissioner of Property, the Commissioner of Housing, and the Commissioner of Parks and Recreation on undertaking similar water audits for facilities owned and operated by the City of Toronto.

Recommendation No. 6 - The Commissioner of Finance and the Commissioner of Works undertake to update the water rate projections contained in the joint report dated November 5, 1990 to the Works Committee from the Commissioner of Finance and the Commissioner of Works, including a cost benefit analysis and analysis of considerable fixed costs not reduced by water conservation.

No comment.

Recommendation No. 7 - Metropolitan Toronto publicize and provide "Water Conservation Tips" as per the attached draft.

I concur with the provision of Water Conservation Tips similar to the draft attached to the Commissioner of Works' Water Conservation Strategy report.

Commissioner.

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'Clause embodied in Report No. 19 of The Works Committee, as adopted by the Council of The Municipality of Metropolitan Toronto at its meeting held on September 25, 1991.

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WATER CONSERVATION STRATEGY.

The Works Committee recommends the adoption of the following report (July 23, 1991) from the Commissioner of Works:

Recommendations:

It is recommended that:

(1) the Water Conservation Strategy Report dated May 31, 1991, prepared by R.V. Anderson Associates Ltd. be received;

(2) the Strategy Report be forwarded to the Municipal Coordinating Committee on Water Conservation, the area municipalities, the Region of York and the Ministry of the Environment for review and comment;

(3) Metropolitan Toronto initiate development of a program of public education to promote water conservation in consultation with the Municipal Coordinating Committee on Water Conservation to achieve a volume reduction of between 13 and 23 per cent. by the year 2011 as outlined in the Strategy Report;

(4) Metropolitan Toronto proceed to prepare estimates of the costs of a conservation programme including staff, retrofit devices and universal metering and discuss with the Coordinating Committee on Water Conservation alternative means for either providing residents with water conservation retrofit kits or informing residents of the benefits of installing and maintaining retrofit kits;

(5) Metropolitan Toronto expand initiatives to progressively audit, retrofit and monitor Metropolitan owned and operated facilities with water conserving devices to establish more reliable information on the actual impact of conservation devices and habits;

(6) the Commissioner of Finance and the Commissioner of Works undertake to update the water rate projections contained in the joint report dated November 5, 1990, to the Works Committee from the Commissioner of Finance and the Commissioner of Works including a cost benefit analysis and analysis of considerable fixed costs not reduced by water conservation; and

(7) Metropolitan Toronto publicize and provide "Water Conservation Tips" as per the attached draft.

Background:

By adoption of Clause No. 16 of Report No. 30 of The Management Committee on November 7, 1990, Metropolitan Toronto Council authorized a study to assess the potential impacts of a comprehensive water conservation strategy for Metropolitan Toronto, to be undertaken by

consultants, R.V. Anderson Associates Ltd., with Environment Canada as a co-sponsor of this study paying one-half of the total cost of up to $60,000.00.

The study report has now been completed and the Executive Summary contains the principal assumptions, findings and recommendations.

Water conservation is promoted as an anticipatory measure rather than a reactive measure. It will allow for the more efficient and effective use of water and sewage infrastructure in the future now that technological innovations are available to reduce the quantity of water required for various residential, commercial, institutional and industrial applications. The Strategy Report indicates that a volume reduction of between 13 and 23 per cent. is possible.

Conservation may have the potential to provide some capacity to accommodate projected growth over the long term in Metropolitan Toronto and parts of the Region of York supplied with water from the Metropolitan Toronto system, with savings in filtration and wastewater treatment plant capacity assuming up to 25 per cent. of users participate with conservation initiatives by 2001 and 50 per cent. by 2011.

There are almost 900,000 residential units in Metropolitan Toronto, many with more than one washroom. An additional 300,000 new residential units are targeted to be constructed over the next 20 years. It will take a number of years for the manufacture, supply and installation of significant quantities of retrofit water conserving devices for existing residences and water conserving fixtures for new residences. Initially, standards must be developed and adopted and industry must retool to meet the demand. Provincial legislation or regulation will be required to give legal status to manufacturing standards and to eventually discourage the sale of non-water conserving fixtures.

Section 33 of the Metropolitan Toronto Act includes a clause which states an existing statutory requirement of Metropolitan Toronto as follows".....to secure to the inhabitants of the Metropolitan Area a continued and abundant supply of pure and wholesome water, ...". Under this section, Metropolitan Toronto is accountable for supplying water to meet actual demand. In view of the time required to implement conservation, we must plan to supply additional water in the near term to serve the increasing demand projected from past statistical trends to higher water use and estimates of increased population to be served in Metropolitan Toronto and the Region of York. Despite the potential benefits of conservation over the long term, the Strategy Report indicates that in order to meet near term requirements for peak filtration plant capacity it will be necessary to proceed with the proposed R.L. Clark Filtration Plant expansion from 659 Megalitres per day (ML/d) to 1365 ML/d. (We have received the preliminary design study report as addressed in the report to Works Committee for information dated March 26, 1990, and are currently consulting with the Area Municipalities' Medical Officers of Health on the possible process change.)

The conservation strategy could be designed to be either revenue neutral or revenue positive. Water bills would not increase in the revenue neutral case if as the rate rises the quantity of water used decreases. The consumer would see higher water bills in the revenue positive case but would know that the additional funds were targeted for water resource improvement projects. Additional revenues from a revenue positive strategy would be available, after allowing for the costs of a conservation programme, for infrastructure replacement, upgrades, and other water resource related initiatives, such as combined sewer overflow reduction and storm water quality improvement. The strategy report is based on the assumption of a minimum of a 25 per cent. real combined water and sewage surcharge rate increase by 2001 and a minimum of a 50 per cent. increase by 2011. In 1990 the Treasury Department in cooperation with the Works Department projected a combined water and sewage

surcharge rate increase totalling 87.5 per cent. for 1991-1995, including allowance for inflation (about 60 per cent. real increase excluding inflation) to provide funds for Water Supply and Water Pollution Control Capital Works Programme expenditures, including trunk relief sewer and treatment plant expansion, of $760,470,000.00. Much of that planned expenditure may still be required with water conservation in place. Therefore the reports proposed real price increase of 50 per cent. for water conservation is in addition to most of the 87.5 per cent. increase already forecast in 1990. Further study is required into the fixed costs such as fire flow capacity, sewage solids handling and combined sewage overflow reduction which are not affected by reducing the volume of water used.

Metropolitan Toronto has been required under Section 35(3) of the Metropolitan Toronto Act to operate water supply on a self-sustaining basis funded from user rates. Over the last several years Metropolitan Toronto Water Pollution Control has moved to a self-sustaining basis funded from a surcharge on the water rates. Some of the area municipalities continue to draw from general tax revenues for water and sewer expenditures. The Strategy recommends that area municipalities move to a user charge basis for financing water supply and water pollution control.

It is expected that through technological innovation in water use fixtures and appliances, conservation of water use can be realized without a reduction in the level or quality of service to the end user.

Preliminary investigations indicate that sewage treatment plant effluent quality will improve marginally as a result of water conservation reducing hydraulic loading rates at waste water treatment plants. However solids handling facilities, for example, will continue to increase as the population grows.

Conservation of water use will minimize the energy required to pump and distribute water to users and to heat water for various applications including residential applications such as showering, dish and clothes washing. Water conservation will have a positive impact on energy demand/supply planning. Water conservation will reduce the use of electricity and fossil fuels such as natural gas to heat water and to treat wastewater. This in turn will reduce the emission of gases which are contributing to the Global Warming and the Greenhouse effect. Water conservation will be consistent with the Metropolitan Toronto Strategic Plan objectives of sustainable development. Quoting from the key objectives of the Metropolitan Toronto Government Strategic Plan, " The Metropolitan Toronto Government will seek active public participation to reduce the consumption of water, energy and non-renewable resources and to reduce emissions of gasses that are thinning the ozone layer and contributing to global warming. To reduce unnecessary consumption of non-renewable resources, the Government of Metropolitan Toronto will by the year 2000 reduce per capita consumption of municipally treated water through promotion of its efficient use."

In order to implement water conservation, action is required in the three principal areas of public education, legislative and regulatory changes and water pricing. The Strategy Report emphasizes water pricing aspects. Additional work is required in the areas of water rates structure, education and regulatory changes.

By adoption of Clause No. 4 of Management Committee Report No. 11 on May 8, 1991, Metropolitan Toronto Council invited Boards of Education in Metropolitan Toronto to participate in the preparation of curriculum supplements to assist in the teaching of conservation principles. Metropolitan Council also authorized the formation of a Metropolitan Toronto Coordinating Committee on Water Conservation to coordinate the delivery of water conservation programs in each of the six area municipalities.

Metropolitan Toronto along with the area municipalities should promote public education of water conservation devices and habits based on potential savings by customers based on projected higher water rates. A list of draft conservation tips is appended and could form the basis for a public information campaign. In the program of public education on water conservation, the proposed conservation strategy will be explained and promoted.

After consultation through the Coordinating Committee on Water Conservation we shall report further on staffing and cost sharing issues.

Regular monitoring of the impact of conservation on water supplied will be required to forecast future demand. The report recommends standardized billing to facilitate monitoring. This is imperative as we embark upon shaping the demand side of the demand/supply equation. In the past, we have concentrated on adequate supply given a steady and gradually increasing demand. As we try measures to reduce water demand, we shall have to determine how effective each of them proves to be.

When we receive comments from the Region of York and the Ministry of the Environment on the Conservation Strategy, we shall report on the proposed R.L. Clark Filtration Plant expansion.

Water conservation retrofit devices have been installed and monitored at a number of Metropolitan Toronto locations. For example, Kipling Home for the Aged which is operated by the Community Services Department, has toilet dams installed over the last two years and staff there advise that there is no record of operational problems arising. Staff of the Willowdale Manor, a seniors' residence operated by the Metropolitan Toronto Housing Company Limited, advise that water saving showerheads were installed in the Fall of 1990 as a result of a 1989 energy audit paid for by Ontario Hydro. Again, no problems have been indicated by staff there. As a result of this positive experience, it is recommended that the retrofit program be progressively expanded to include all Metropolitan Toronto locations to set a leadership example.

The City of Toronto has requested cost-sharing from Metropolitan Toronto for a water conservation program they have linked with a program of universal metering. We plan to discuss a public information program with the other five area municipalities through the Coordinating Committee on Water Conservation, and to evaluate the options of cost-sharing with the area municipalities and the public or promotion of retrofitting for cost avoidance without offering a share of cost.

The estimated cost of retrofitting the 900,000 existing residential units in Metropolitan Toronto plus the future additional 300,000 units is expected to fall with the range of approximately 10 to 50 million dollars depending on factors such as the amount of installation and maintenance service provided, the participation rate, the number of washrooms and the type of retrofit devices. This preliminary figure can be refined through discussion at the Coordinating Committee on Water Conservation and the water consumer.

A cost-sharing approach would expedite early conservation, however, long term maintenance support and new installation may be better served by promotion as an ongoing cost avoidance opportunity for the water consumer.

The Province of Ontario is expected to make a public announcement in the near future on future initiatives to conserve water in Provincial Government buildings and amend the Ontario Plumbing Code with respect to water conservation devices, and a Metropolitan Toronto Works Department location has been proposed by Provincial staff for the announcement.

A copy of the Executive Summary of the Water Conservation Strategy Report will be available for review by each member of the Works Committee.

Indoor/Outdoor Residential Water Conservation Tips

Bathroom

- Toilets, showers, tubs and sinks use about 75 per cent. of residential water.
- A conventional shower will use up to 15-25 litres per minute, a water efficient shower will use 8-10 litres per minute.
- Install low-flow showerheads to reduce flow.
- An average bath uses 125-150 litres of water.
- When filling the tub, close the tub's drain before turning on the water.
- An average toilet uses 14-25 litres per flush.
- Do not use the toilet as a garbage disposal. Throw garbage in the wastebasket, not the toilet.
- Install water saving devices in toilets.
- Low-volume toilets can save money in water and sewer charges.
- A low-volume toilet can save up to about 12 litres per flush over a standard model.
- A running tap can use up to 20 litres or more of water per minute.
- Brushing your teeth with running water will use about 40 litres of water.
- Shaving with running water will use about 50-70 litres of water.
- Washing your hands uses about 10 litres of water.
- Install a faucet aerator to restrict the flow of water to 8-10 litres per minute.
- Turn off the water when you brush your teeth.
- Use a cup to rinse after brushing.
- When shaving, put stopper in the sink to collect water used for rinsing the razor.
- Display conservation stickers/labels on bathroom mirrors.

Kitchen

- Hand dish-washing, with running water, will use about 80 litres of water or up to 10 per cent. of residential consumption.
- Wash only full loads in a dishwasher which uses about 45 litres of water per cycle.
- Do not use garburetors (garbage disposals), which use about 20 litres of water per minute. Instead, use a composter.
- Chill water in bottles in the refrigerator to avoid running water.
- Use ice cubes to cool tap water rather than running water until it's cool.
- A kitchen faucet uses about 20 litres of water per minute.
- Install a low-flow aerator on the kitchen faucet.
- If you wish to purge water standing overnight from your privately-owned water pipe system, save this water for some useful purpose.

Laundry

- A full cycle in a laundry machine will use 200-300 litres of water or about 15 per cent. of residential water consumption.
- Wash full loads of laundry, but do not overload.
- Save hot water and energy by using detergents for cold water. Cold water is gentler on fabrics.

Car wash

- Washing a car, with the hose running, for 20 minutes uses about 400 litres of water.
- Use a bucket of water to remove the soil from the car. Hose down as a final rinse. Use a nozzle that can be shut off at the discharge end of the hose.

Gardens/Lawns

- Don't water the lawn during sunny days when water droplets magnify the sun's rays causing the grass to burn.
- Water the lawn in the early morning to cut down on evaporation losses.
- A lawn sprinkler will dispense 2000-3000 litres of water to irrigate an average front yard.
- When watering the lawn make sure not to water the driveway or sidewalk.
- Do not water on windy rainy or very hot days.
- Catch water from the roof in rain barrels to water garden and plants.
- Roof runoff from a typical rain storm event will be 1500 litres.
- Cut grass at 2-3 inch height to reduce amount of watering required.
- Avoid using fine mist sprinklers that hasten evaporation. Use sprinklers with course sprays or use a hand-held hose for targeted watering.
- Consider Xeriscaping practices such as: reducing turf area, planting low water demand plants, mulching, rock gardens.
- Use a broom rather than a hose to clean sidewalks and driveways.
- Use a swimming pool cover to prevent evaporation, keep debris out and keep heat in.

Leak Detection

- Be a leak seeker. A slow steady tap leak uses about 300 litres per week. A fast drip uses about 800 litres per week.
- A leak in the toilet can waste 200 litres of water per day.
- To see if there are any leaks, read your water meter before a period when your home is unoccupied and then read your water meter when you return home.

General

- Energy is used to heat, pump and treat water. Reducing water will save energy.
- Many sewage treatment plants are too small too handle rain water added to the wastewater of the populations they serve. This can lead to the bypassing of the sewage plant, dumping raw sewage into the waterways or sending wastewater through the plant so rapidly that proper treatment is impossible.
- A reduction in wastewater entering the plants often means better treatment and cleaner waters being discharged to our rivers.
- Follow the three golden rules of water conservation - REDUCE, REPAIR and RETROFIT - we can easily cut our water use by 25 per cent.

The Works Committee submits, for the information of Council, the following report (August 27, 1991) from the Commissioner of Works:

Recommendations:

That this report be received for information.

Background:

At its meeting on July 31, 1991, the Metropolitan Works Committee deferred consideration of the report dated July 23, 1991, from the Commissioner of Works on the Water Conservation Strategy with a request that the Commissioner of Works submit a further report on how water conservation relates to revenue generation and on the free distribution of kits by other municipalities.

Water is generally underpriced in Canada both as a natural resource and as a mean for recovering the cost of water supply and waste treatment facilities infrastructure. With an improved pricing structure coupled with effective metering programs, we can increase the efficiency and reduce the volume of water used, reduce the cost of water supply and waste treatment facilities and reduce environmental damage from waste water discharge systems due to increased efficiency.

As part of the water conservation strategy as it relates to revenue generation, the sewage surcharge rate is forecast to increase faster than the water rate. As a result, the sewage surcharge revenue will become a larger proportion of combined revenue. Water pollution costs are forecast to increase to fund capital projects related to infrastructure replacement and water quality improvements such as trunk relief sewers for combined sewage overflow reduction, system reliability and additional capacity to accommodate more compact urban development. Also, these funds will be used for storm water quality improvement projects in the Humber and Don Watersheds, treatment plant performance improvements, and sewer separation subsidies. Any surplus revenue generated from the combined water and sewage surcharge rate accrues to two separate reserve funds - the Stabilization of Water Rate Reserve and the Water Pollution Control Measures Reserve Fund.

On August 19, 1991, the Minister of Natural Resources announced a Provincial Strategy to reduce water consumption and to use water wisely. He indicated that initiatives are underway to amend the plumbing and building codes in co-operation with manufacturers to ensure that water efficient fixtures are used in new development. He also indicated that work has begun to develop an education program supplement for schools.

Other municipalities that promote the efficient use of water are providing water conservation kits free of charge to the residents including the Regional Municipality of Waterloo, and the City of Toronto.

To provide the opportunity for interested residents of all area municipalities in Metropolitan Toronto to participate in the water conservation initiative, consideration is being given to the purchase of water conservation kits to be made available free of charge or at nominal cost to Metropolitan Toronto residents from Metropolitan Toronto Works Department locations. Referring to our experience with home composters as a model, the Province will be requested to share the cost of conservation kits for reduction in flush volume, faucet and showerhead flow. This proposal will be referred to the Coordinating Committee for Water Conservation for further discussion.

The Works Committee also submits the following report (August 28, 1991) from the Deputy Metropolitan Solicitor:

Recommendation:

That this report be received for information.

Background:

At its meeting on July 31, 1991, the Metropolitan Works Committee had before it a report from the Commissioner of Works regarding water conservation policies. At that time, the Works Committee requested a report from the Metropolitan Solicitor with regard to the issue of obtaining authority to increase the rates for water charged by the Metropolitan Corporation.

Discussion:

Section 35 of the Municipality of Metropolitan Toronto Act sets out that the Metropolitan Council may pass by-laws fixing the rates at which water will be supplied to the area municipalities. Section 35(3) of the Act mandates that the Metropolitan Council shall fix the rates at which water is supplied so that the revenues of the water works system will be sufficient to make the system self-sustaining after providing for such maintenance, renewals, depreciation, debt charges and reserves as the Metropolitan Council may think proper.

Section 39 of the Metropolitan Toronto Act provides that the revenues from the water works system shall be applied only for: (a) the reduction of any indebtedness assumed or incurred with respect to the system; (b) the operation, maintenance, renewal, improvement or extension of the system; (c) the undertaking or financing of sewage works for the Metropolitan Corporation or for the area municipalities; or (d) the establishment of reserve funds to be used at any future time for any of the purposes mentioned in clause (a), (b), or (c) above or for the stabilization of rates.

Pursuant to section 36 of the Metropolitan Toronto Act, the Metropolitan Corporation may add a surcharge to the rates to be spent on the collection, treatment or disposal of sewage and land drainage received from the area municipalities.

Accordingly, the only amounts that may be charged for water are those which result in the water works system being self-sustaining. In order to increase the rates charged for water to further any other objective, including conservation, the Metropolitan Corporation may wish to apply to the Province to allow the Metropolitan Corporation to consider matters other than those set out in sections 35(3) and 39 of the Metropolitan Toronto Act. Alternatively, the Metropolitan Corporation may wish to request a deletion of section 35(3) of the Metropolitan Toronto Act and an amendment to section 39 to allow the revenues of the waterworks system to form part of the general funds of the Metropolitan Corporation.

The Works Committee reports, for the information of Council, having directed that:

(1) the Metropolitan Solicitor be requested to submit a report to the Committee on the form of an application that could be made to the Province of Ontario to delete section 35(3) of the Municipality of Metropolitan Toronto Act and an amendment to section 39 to allow the revenues of the waterworks system to form part of the general funds of the Metropolitan Corporation; and

(2) the Commissioner of Works be requested to submit a report to the Committee on the impact to tenants of any increase in water rates.

58(c)

Clause embodied in Report No. 3 of The Works Committee, as adopted by the Council of The Municipality of Metropolitan Toronto at its meeting held on January 29 and 30, 1992.

3

WATER CONSERVATION PROGRAM.

The Works Committee recommends the adoption of the following report (December 27, 1991) from the Commissioner of Works:

Recommendation:

That we be authorized to commence consultation with the area municipalities on a Metropolitan Toronto Water Conservation Program with implementation scheduled to start in May, 1992, with the distribution of information to the public.

Background:

Metropolitan Toronto has an abundant source of raw water for our water supply system, unlike some areas where water conservation is necessary because the water source is limited. We do, however, have an obligation to use water efficiently, to reduce power and treatment of chemical use, and to avoid premature expansion of the treatment and distribution system, and of the waste water collection and treatment system.

On September 25, 1991, Metropolitan Council approved a preliminary report on a Water Conservation Strategy which included recommendations on the development of a Water Conservation Program in consultation with the area municipalities. The initial component of this program was the development of a series of water conservation facts and tips for distribution to the public with the water bills from the area municipalities. The attached information sheet is now ready for final consultation with the area municipalities. Printing and distribution is scheduled for May, 1992, subject to approval of our 1992 Current Budget Estimates.

We are also planning a workshop with representatives from the area municipalities in late January to present an overview, and commence detailed discussions, and to initiate development of a comprehensive program of the Water Conservation Study Report by our consultants, R.V. Anderson and jointly sponsored by Metropolitan Toronto, the Provincial Ministry of Natural Resources and Environment Canada. The proposed facts and tips, and the strategy for water conservation in Metropolitan Toronto, which have been prepared for consultation with the Area Works Commissioners, is appended.

We propose to advise the area municipalities that we will be promoting efficient use of water commencing prior to the summer of 1992, and that they should anticipate some impact from more efficient use of water by the public. One of the comments already received from an area municipality is concern that their water revenue will be reduced.

Our intent to promote more efficient use of water should be made known during the area municipalities' budget review period in order that they be aware of it in making their consumption projections for 1992. Consultation with the area municipalities will continue to develop the details of the conservation program and its promotion.

The Water Conservation Study Report estimates potential conservation in the range of 10 to 26 per cent. We would anticipate a much more modest reduction at least initially, possibly three to five per cent. in the early years, which may be difficult to measure and confirm due to other variables which affect annual and daily water consumption.

The Metropolitan water supply system average day demand in 1991 was 1430 megalitres per day (ML/d) or 315 million Imperial gallons per day (MIGD), and the peak day was 2340 ML/d (515 MIGD). Voluntary consumption restraint was requested once during four consecutive days in 1991, and previously in 1988. Consumption preceding the restraint period in 1991 was 2268 ML/d (499 MIGD).

The need for unplanned consumption restraints during prolonged hot dry weather in future, may be reduced or eliminated by planning for voluntary restraints. For example, one potentially significantly effective measure would be planned lawn watering on even and odd days for even and odd numbered properties initially on a voluntary compliance basis.

Other conservation measures, such as improved leakage control, the promotion of water efficient products for new development and retrofitting, will also reduce the average day consumption.

Our current project to increase the production capacity of the R.L. Clark Filtration Plant is under discussion with the Ministry of the Environment and Medical Officers of Health of the area municipalities served, to develop a consensus on proposed treatment process changes coincident with the capacity expansion. Because of the projected growth in demand from the Province of Ontario for the Region of York, and since significant water conservation benefits would only be derived in the long term, this project should proceed subject to finalization of the process technology review and capital cost sharing negotiations with the Region of York.

We will report further on program development and funding requirements following consultation with the area municipalities. The facts and tips will be presented to Committee in final form after approval of the 1992 Budget, with our recommendations for the cost of printing, distribution, and advertising of this new program, estimated to be approximately $70,000.00.

We recommend approval in principal for this program in order that we can continue consultation and planning for information distribution.

Metropolitan Works Department

Water Conservation Strategy
in
Metropolitan Toronto

Conservation Concept:

Water supply consumed leads to the treatment of waste water in an approximately equal average day quantity. We can use less water which in turn will produce less waste water for treatment and discharge, reduce the peak and average day demand and defer the need for systems expansion and related cost.

(1) Information and Promotion

Regular information including facts and tips on conservation methods, equipment distributed with water bills, and advertising.

(2) Water Price Management

Pricing water to reflect the true cost will be an incentive to use water efficiently. Metering all water use by monitoring and auditing will identify excessive use and the reduction potential.

(3) Demand Management

Water use can be managed by:

(a) alternate day lawn watering - odd and even property lawn watering on odd and even calendar days;

(b) install indoor water efficient fixtures, fittings and retrofits;

(c) install outdoor flow control devices and discourage use of bare open-ended hoses and encourage use of flow controllers instead; and

(d) amend the Ontario Plumbing Code to phase out inefficient fixtures and fittings for sale.

Councillor Howard Moscoe, North York - Spadina, appeared before the Committee in connection with the foregoing matter.

The Works Committee reports, for the information of Council, having directed that the Commissioner of Works be requested to report back to the Committee providing a revised version of the water conservation information sheet, and on the following:

(1) the per capita consumption of water for each Area Municipality;

(2) a balance between conservation and capital requirements, and the amount of fluoride and chlorine that is injected into Lake Ontario from Metropolitan Toronto's treatment facilities and the environmental consequences thereof;

(3) the feasibility of establishing water reduction targets for Area Municipalities, and developing a pricing mechanism that would encourage reduction of water; and

(4) the feasibility of an experimental program or pilot project using water saving mechanisms in an area of Metropolitan Toronto.

(A copy of the information sheet referred to in the foregoing report has been forwarded to all Members of Council with the agenda for the Works Committee meeting of January 8, 1992, and a copy thereof is on file in the office of the Metropolitan Toronto Clerk.)