

Clause embodied in Report No. 15 of the Policy and Finance Committee, as adopted by the Council of the City of Toronto at its regular meeting held on November 26, 27 and 28, 2002.

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**Preferred Strategy and 25-Year Implementation Plan
for the City of Toronto Wet Weather Flow Management
Master Plan**

(City Council at its regular meeting held on November 26, 27 and 28, 2002, amended this Clause by adding thereto the following:

“It is further recommended that the Commissioner of Works and Emergency Services be requested to report to the Works Committee on:

- (1) whether elements of the City of Toronto Wet Weather Flow Management Master Plan directed at:
 - (a) reducing flows to the facility to increase its overall performance;*
 - (b) improving water quality within the Humber River watershed from dry and wet weather sewer discharges; and*
 - (c) reducing the impact of the Humber River flow to the Western Beaches;**should be advanced as a high priority in the implementation of the Plan; and**
- (2) any other steps required to ensure that the Western Beaches are able to be open for swimming during the summer season.”)*

The Policy and Finance Committee recommends:

- (1) the adoption of the Recommendations of the Works Committee embodied in the communication (November 6, 2002) from the City Clerk subject to funds being available in subsequent years; and**
- (2) that the Environmental Assessment respecting the Ashbridges Bay/Coatsworth Cut area be initiated as a priority.**

The Policy and Finance Committee submits the following communication (November 6, 2002) from the City Clerk:

Recommendations:

The Works Committee recommends:

- (1) the adoption of the report dated October 29, 2002, from the Commissioner of Works and Emergency Services, subject to the Wet Weather Flow Management Master Plan Budget allocation, within the Water and Wastewater Services Capital Budget, for the years 2008 to 2012 being increased by \$12 million for additional storage/treatment required for the remaining storm sewer discharging into Ashbridges Bay/Coatsworth Cut;
- (2) the adoption of the report dated November 5, 2002, from the Commissioner of Works and Emergency Services; and
- (3) that Council express its appreciation to all members of the Wet Weather Flow Management Master Plan Steering Committee for their work over the past three years.

The Works Committee reports, for the information of the Policy and Finance Committee and Council, having:

- (1) received the depositions with thanks; and
- (2) referred the following suggestions by the Toronto Environmental Alliance to the Commissioner of Works and Emergency Services for comment:
 - (i) the submission of an update every six months on the monitoring results of the Western Beaches Tunnel; and
 - (ii) support being given to the Water Advocate to host a formal public advisory group on the implementation of the plan.

Background:

The Works Committee at its meeting on November 6, 2002, had before it a report (October 29, 2002) from the Commissioner of Works and Emergency Services recommending that:

- (1) the Commissioner of Works and Emergency Services, with input from the Wet Weather Flow Management Master Plan Steering Committee, finalize the technical studies supporting the Master Plan for submission to the Ontario Ministry of the Environment for the obligatory 30 day public review period under the Municipal Class Environmental Assessment process;
- (2) the Wet Weather Flow Master Plan be approved in principle, subject to approval of the Plan in accordance with the requirements of the Class Environmental Assessment process;
- (3) the Commissioner of Works and Emergency Services report back in early 2003 to the Works Committee once the obligatory Class Environmental Assessment Review period has expired with the final Wet Weather Flow Management Master Plan; and the Chief

Financial Officer and Treasurer in consultation with the Commissioner of Works and Emergency Services also report on a recommended funding model for the 25 Year Implementation Plan;

- (4) the Wet Weather Flow Policy be approved in principle and circulated to Community Councils for their comments, and that the Commissioner of Works and Emergency Services report back with a revised policy incorporating any changes which may be necessary;
- (5) the Wet Weather Flow Plan 2003 requirements be incorporated in the Water and Wastewater Services 2003 Capital Budget; and
- (6) the appropriate City officials be granted the authority to give effect thereto.

The Committee also had before it a report (November 4, 2002) from the Commissioner of Works and Emergency Services respecting feedback received from the most recent public consultation meetings on the Wet Weather Flow Management Master Plan and adjustments made to the 25 Year Implementation Plan as a result of the feedback received; and recommending that:

- (1) this report be received for information;
- (2) the Wet Weather Flow Management Master Plan Budget allocation, within the Water and Wastewater Services Capital Budget, for the years 2008 to 2012 be increased by \$12 million for additional storage/treatment required for the remaining storm sewer discharging into Ashbridges Bay/Coatsworth Cut; and
- (3) the appropriate City officials be granted the authority to give effect thereto.

The Committee also had before it a report (November 5, 2002) from the Commissioner of Works and Emergency Services recommending that:

- (1) authority be granted to accept funding in the amount of \$200,000 from the Ontario Ministry of the Environment (MOE) to fully fund an assessment of the degree to which the Wet Weather Flow Management Master Plan - 25 Year Implementation Plan meets the Toronto and Region Remedial Action Plan Objectives, and to enter into a Memorandum of Understanding with the MOE to carry out the assessment; and
- (2) the appropriate City officials be granted the authority to give effect thereto.

The Committee also had before it the following communications:

- (i) (November 5, 2002) from Ms. Helen Riley, Toronto, Ontario, regarding citizens' concerns with respect to the Wet Weather Flow Management Master Plan;
- (ii) (November 5, 2002) from Mr. Paul Scrivener, the Toronto Industry Network, requesting that staff meet with industry representatives prior to approval of the Wet Weather Flow Management Master Plan;

- (iii) (November 6, 2002) from Ms. Lois Griffin, Chair, Humber Watershed Alliance, in support of the Wet Weather Flow Management Master Plan and commending the work undertaken by the City to resolve stormwater management problems;
- (iv) (November 6, 2002) from Mr. Mark Wilson, Chair, Don Watershed Regeneration Council, expressing strong support for the recommended Wet Weather Flow Management Master Plan and the capital budget allocation to allow implementation of the plan to begin in 2003;
- (v) (November 6, 2002) from Mr. Simon Llewellyn, Director, Environmental Conservation Branch, Environment Canada, Ontario Region; Ms. Doris Dumais, Regional Director (A), Ontario Ministry of the Environment; and Mr. Brian Denney, Director, Watershed Management, Toronto and Region Conservation Authority, congratulating the City on the Wet Weather Flow Management Master Plan, and expressing support for the general directions established in Strategy 5 for study areas 2-5 and Strategy 5a for study area 1; and
- (vi) (November 2, 2002) from Citizens for a Safe Environment, providing comments on the Wet Weather Flow Management Master Plan.

The following persons appeared before the Works Committee in connection with the foregoing matter:

- Mr. Lino Grima, Institute for Environmental Studies, University of Toronto, and submitted material with respect thereto;
- Mr. Dalton Shipway, Toronto, Ontario;
- Ms. Karey Shinn, Toronto, Ontario, and submitted a communication with respect thereto;
- Mr. Brian Denney, Watershed Management Director, Toronto and Region Conservation Authority;
- Ms. Peg Lush, Toronto, Ontario, and submitted material with respect thereto;
- Ms. Shelley Petrie, Toronto Environmental Alliance;
- Mrs. Lois James, Scarborough, Ontario;
- Mr. Jim Neff, Toronto, Ontario, and submitted material with respect thereto;
- Ms. Suzanne Barrett, Toronto and Region Remedial Action Plan; and
- Councillor Sandra Bussin, Ward 32 - Beaches-East York.

(Report dated October 29, 2002, addressed to the

Works Committee from the
Commissioner of Works and Emergency Services)

Purpose:

To seek approval in principle for the Wet Weather Flow Management Master Plan, the corresponding 25 year implementation schedule and Wet Weather Flow Management Policy.

Financial Implications and Impact Statement:

Implementation of the Wet Weather Flow Management Master Plan will have a financial impact estimated at \$1.035 billion on the Water and Wastewater Services Capital Budget and \$228 million on the Division's Operating Budget over the next 25 years.

The current proposed Water and Wastewater Services Capital Budget submission incorporates a \$122 million request for the implementation of the Plan from 2003 to 2007. For the year 2003, only \$2.4 million is planned and this amount is included in the 2003 Capital Budget. The Capital Budget funding request will be reviewed annually through subsequent Capital Budget submissions to ensure that the objectives of the Plan are achieved in accordance with the schedule proposed.

Recommendations:

It is recommended that:

- (1) the Commissioner of Works and Emergency Services, with input from the Wet Weather Flow Management Master Plan Steering Committee, finalize the technical studies supporting the Master Plan for submission to the Ontario Ministry of the Environment for the obligatory 30 day public review period under the Municipal Class Environmental Assessment process;
- (2) the Wet Weather Flow Master Plan be approved in principle, subject to approval of the Plan in accordance with the requirements of the Class Environmental Assessment process;
- (3) the Commissioner of Works and Emergency Services report back in early 2003 to Works Committee once the obligatory Class Environmental Assessment Review period has expired with the final Wet Weather Flow Management Master Plan; and the Chief Financial Officer and Treasurer in consultation with the Commissioner of Works and Emergency Services also report on a recommended funding model for the 25 Year Implementation Plan;
- (4) the Wet Weather Flow Policy be approved in principle and circulated to Community Councils for their comments, and that the Commissioner of Works and Emergency Services report back with a revised Policy incorporating any changes which may be necessary;

- (5) the Wet Weather Flow Plan 2003 requirements be incorporated in the Water and Wastewater Services 2003 Capital Budget; and
- (6) the appropriate City officials be granted the authority to give effect thereto.

Background:

Toronto Council at its meeting of July 4, 5 and 6, 2000, by adoption of Clause No. 12 of Report No. 13 of The Works Committee, approved the engagement of five technical consulting teams to provide engineering services for the development of the Wet Weather Flow Management Master Plan (WWFMMP). The WWFMMP is being developed on a watershed basis and provides a consistent approach for the virtual elimination of combined sewer overflows (CSO's) and control of stormwater discharges across the City of Toronto, for the prevention, control and reduction of wet weather flow impacts.

The development of the WWFMMP is following the planning principles of the Environmental Assessment Act as detailed in the Class Environmental Assessment for Municipal Water and Wastewater Projects and is incorporating broad public and agency consultation on all aspects of the Plan development.

Extensive public and stakeholder consultation has occurred throughout the process. Fifteen workshops have been held around the City, one City-wide workshop, eight focus groups held with residential property owners, industrial, commercial, and institutional property owners and developers; the distribution of the "Opportunity Assessment" document to watershed and other target groups, and government agencies for comment and two meetings with the "905" municipalities to introduce the study, preliminary study findings and discuss common initiatives. More recently, a series of five public workshops across the City has been held in October 2002 to present and receive comments on the preferred strategy, the 25 year Implementation Plan, and a Wet Weather Flow Management Policy.

Clause No. 4 of Report No. 5 of The Works Committee, titled "Progress Report and Revised Work Plan Schedule for the Wet Weather Flow Management Master Plan" adopted by Council at its meeting on April 16, 17 and 18, 2002, identified the objectives and targets for the WWFMMP along with evaluation criteria for the evaluation of alternative wet weather flow management strategies. In addition, over 90 potential stormwater management and combined sewer overflow control measures were compiled for consideration in the development of the alternative strategies.

Subsequent tasks completed include the development and evaluation of alternative strategies, the selection of a preferred strategy and the development of a 25 year implementation plan. In addition, alternative funding options to finance the implementation plan have been assessed, a monitoring plan that will measure the effectiveness of the strategies as they are implemented has been developed and a harmonized Wet Weather Flow Management Policy to guide future management of stormwater in the City has also been developed.

At its meeting of October 9, 2002, the Works Committee received a presentation by Councillor Irene Jones, Chair of the WWFMMP Steering Committee, on the WWFMMP outlining the significance of the WWFMMP, the Preferred Strategy, the 25 Year Implementation Plan,

corporate priorities addressed in the Plan, stormwater management measures included in the Implementation Plan, estimated cost, overall benefits to be achieved and funding option(s) being investigated to finance the Implementation Plan.

Comments:

Through a strategic planning process a number of alternative strategies for the management of wet weather flow impacts were formulated. Each of the alternative strategies were developed using a hierarchical approach to stormwater management: considering source controls measures first, then conveyance controls measures followed by end-of-pipe control measures based on a set of assumptions summarized as follows:

- Strategy 1: (Status Quo) implementation of Stormwater Best Management Practices (BMPs) that maintain existing environmental conditions with future intensification.
- Strategy 2: (Opportunistic) implementation of opportunistic BMPs (i.e. those BMPs that could be implemented as opportunities arise). The Combined Sewer Study Area considered two opportunistic strategies consisting of different levels of sewer separation.
- Strategy 3: (Strive for Moderate Targets – end-of-pipe focus) implementation of BMPs that strive towards achieving moderate environmental improvements based on a voluntary uptake for source controls which requires more focus on end-of-pipe controls.
- Strategy 4: (Strive for Moderate Targets – source control forms) implementation of BMPs that strive towards achieving the same level of moderate environmental improvements as Strategy 3 but with the focus on an enhanced level of uptake for source controls and less focus on end-of-pipe controls. Strategies 3 and 4 helped to illustrate the differences in environmental impacts and types of BMPs required when “Voluntary” versus “Enhanced” uptake for source controls are applied.
- Strategy 5: (Strive for Enhanced Targets) implementation of enhanced levels of source, conveyance and end-of-pipe control measures that strive towards achieving significant environmental improvements, such as achieving Provincial Water Quality Objectives. Three alternative (5, 5a and 5b) strategies were considered for the Combined Sewer Service Area consisting of different levels of sewer separation.

Consistent with the requirements of the Environmental Assessment Act, the alternative strategies were assessed using evaluation criteria that incorporated the effectiveness in meeting the objectives of the WWFMMP as well as social/cultural, environmental and economic factors.

Feedback from the steering committee and the broad public consultation process stressed that the WWFMMP should strive to meet Provincial Water Quality Objectives. Based on the study philosophy and hierarchical principle, public feedback and the results of the evaluation process, a modified version of Strategy 5 was selected as the preferred wet weather flow management strategy.

In the Combined Sewer Service Area Strategy 5a is being recommended, pending the feedback received from the public workshop on October 28, 2002, as it is the most flexible in ultimately achieving the study objectives, achieves higher levels of improvements in a shorter time frame, has a considerably lower cost and has less social impacts than Strategy 5 or 5b.

Strategy 5a is similar to Strategy 5 recommended in the separated sewer areas of the City. However, in the Combined Sewer Service Area, road sewer separation would be implemented as required to eliminate basement flooding. In the remaining parts of the Combined Sewer Service Area, road sewer separation would be implemented on an opportunistic basis where soil conditions permit. The combined sewer overflows that remain, after accounting for the benefits of the proposed source controls and conveyance controls, would be managed through the implementation of underground storage facilities to provide detention followed by treatment to meet the requirements of the Ministry of the Environment Procedure F-5-5 (Policy for the control of combined sewer overflow discharges).

To implement the combination of all enhanced source, conveyance and end-of-pipe control measures of the preferred strategy on a City-wide basis and to further achieve the ambitious goal of Provincial Water Quality Objectives, the Plan implementation may take 100 years at a cost estimated to be in the order of \$12 billion.

An Implementation Plan has been developed which prioritizes and lists projects to be implemented over the next 25 years. A detailed listing of the projects included in the Plan for years 2003-2007 along with City maps showing locations of proposed stream restoration, conveyance controls, end-of-pipe control measures has been provided separately to Committee members and provided to the Clerk's office. A summary of works proposed with their associated costs is included in Table 1. The Implementation Plan addresses the corporate priorities of health and safety (i.e., eliminate basement flooding and provide swimmable water quality at waterfront beaches), infrastructure protection (i.e., prevent stream erosion) and renewal (i.e., eliminate dry weather discharges), intensification (i.e., accommodate the City's Official Plan) and legislative requirements to eliminate combined sewer overflows (i.e., satisfy Ministry of the Environment Procedure F-5-5). The Implementation Plan also addresses the objectives of the City's Environmental Plan regarding water quality improvements and advances the water quality improvement objectives of the Toronto and Region Remedial Action Plan.

Overall benefits that would be incurred within the 25-Year Implementation Plan are substantial across the City and include:

- (i) swimmable waterfront beaches;
- (ii) elimination of combined sewer overflows - in compliance with Ministry of the Environment requirements;
- (iii) basement flooding protection;
- (iv) protection of City's infrastructure from stream erosion;
- (v) restoration of degraded local streams and improved stream water quality;
- (vi) reduction of algae growth along the waterfront and in streams; and
- (vii) restoration of aquatic habitat.

The following are the proposed measures of the 25 Year Implementation Plan and their associated cost:

Table 1

| Capital Cost (\$ million) | | | | |
|---|--------------------|--------------------|--------------------|-------------------|
| Measure | Years 2003-2007 | Years 2008-2012 | Years 2013-2025 | Total 25 years |
| Public Education - city wide over 25 years - focussed on increasing public awareness | 6 | 6 | 18 | 30 |
| Source Controls - city wide over 25 years - existing ~ 10-15 percent participation rate - target of 40 percent participation rate is proposed | 20 | 21 | 66 | 107 |
| Municipal Operations - city wide over 25 years - search and disconnect illicit sanitary cross connections - enhanced street sweeping and catchbasin cleaning - monitoring of Plan implementation and effectiveness | - | - | - | - |
| Basement Flooding – emphasis in first 5 years - focused on cluster areas previously identified - sewer system upgrading and “home isolation” program | 55 | - | - | 57 |
| Conveyance Controls - city wide over 25 years - protect existing ditch network - exfiltration systems (“leaky” storm sewers) | 17 | 23 | 47 | 87 |
| Shoreline Management – implemented in first five years - Humber River Waterfront deflector arm - Etobicoke Creek Waterfront deflector arm | 41 | 1 | - | 42 |
| Stream Restoration – emphasis in first 15 years - focus on protecting City’s infrastructure - restore aquatic stream habitats - 65 km of stream restoration proposed | 34 | 27 | 51 | 112 |

| Capital Cost (\$ million) | | | | |
|--|--------------------|--------------------|--------------------|-------------------|
| Measure | Years 2003-2007 | Years 2008-2012 | Years 2013-2025 | Total 25 years |
| End-Of-Pipe Controls – implemented over 25 years | | | | |
| Green End-of-Pipe: Stormwater Ponds, Constructed Wetlands - opportunistic basis where sufficient open space available - 173 facilities proposed | 25 | 29 | 89 | 143 |
| Underground Storage: space limited considerations - necessary to address combined sewer overflows - 16 CSO facilities proposed - 27 stormwater facilities proposed - 4 CSO treatment facilities proposed | 21 | 113 | 325 | 457 |
| Total Capital Cost | 219 | 220 | 596 | 1,035 |
| Operation and Maintenance Cost (associated the new stormwater control measure) | 14 | 22 | 192 | 228 |

The total capital cost for the 25 year Implementation Plan is estimated at \$1.035 billion resulting in an annual expenditure of approximately \$41.4 million. The implementation of these new capital works will generate operational and maintenance costs estimated to be \$228 million with an annual operating cost of about \$18 million projected by the end of the 25 year plan.

To support this expenditure the City’s Finance Department has assessed various funding options, including increasing water rates, levying property taxes, implementing user charges apportioned to the percent impervious of an individual lot, development charges and grants/subsidies, etc., as potential sources of revenue to finance the Plan.

Historically, in the City of Toronto, the water and sewer rates have been used to fund the water and wastewater capital and operating programs including the stormwater management programs contained in the past and current capital budgets. However, legislation, with certain constraints, does allow for the City of Toronto to consider alternative funding options for wet weather flow management as identified above. A joint report from the Chief Financial Officer and Commissioner of Works and Emergency Services recommending a funding mechanism for the implementation of the WWFMMP over the next 25 years will be submitted to this Committee and the Policy and Finance Committee in early 2003.

It should be noted that the various funding options will impact the variety of users in different ways. The impact on the average homeowner as a result of the Plan recommendations will be in the range of \$30 to \$90 per year depending on the funding option(s) selected.

The final technical reports for the WWFMMP are expected to be completed by the end of December 2002 and submitted for a 30 day review period to fulfil the requirements of the Class Environmental Assessment process. Following the 30 day review period, any changes which

may be required to the WWFMMP will be made and a further report will be submitted to the Works Committee for final approval of the WWFMMP in early 2003. _

Wet Weather Flow Management Policy:

A draft of a Wet Weather Flow Management Policy to guide future management of stormwater in the City, consistent with the overall objectives and principles of the WWFMMP has been prepared as part of the WWFMMP process and has been provided separately to Committee members and provided to the Clerk's office. This policy will guide future management of stormwater in the City, consistent with the overall objectives and principles of the WWFMMP. The policy harmonizes and supersedes the policies of the former municipalities. It will provide guidance to City Departments, the development industry and to property owners. Before the policy is finalized and adopted, it is recommended that the draft Wet Weather Flow Management Policy be circulated to the Community Councils for comment. Once the Wet Weather Flow Management Policy is finalized a further report will be submitted seeking Council endorsement.

Conclusions:

This report has presented the progress reached in the Wet Weather Flow Management Master Plan, the long term (100 years) Preferred Strategy for managing wet weather flows in the City of Toronto and an Implementation Plan for the first 25 years of the Preferred Strategy. The goal of the Preferred Strategy is to meet Provincial Water Quality Objectives within the City of Toronto. The goal of the 25-year Implementation Plan is for the City to fulfill its legislative requirements and to meet the corporate objectives of ensuring health and safety, infrastructure protection and accommodating growth as per the Official Plan. Further, the Plan recommendations are flexible and can be implemented and adjusted to meet new and emerging Corporate priorities such as the Waterfront Secondary Plan. _

The measures contained within the 25-year Implementation Plan include: an enhanced Public Education and Public Outreach Program, enhanced municipal operations, shoreline management, source controls, conveyance controls, end-of-pipe controls, basement flooding protection works, stream restoration works and environmental monitoring and plan review. Overall benefits that would be derived through the 25-year Implementation Plan include: swimmable waterfront beaches; combined sewer overflows in compliance with MOE requirements; basement flooding protection; protection of the City's infrastructure from stream erosion; restoration of degraded restoration of local streams and aquatic habitat and the reduction of algae growth along waterfront and in streams with improved stream water quality.

The development of a funding mechanism to finance the Implementation Plan and a harmonized Wet Weather Flow Management Policy to guide future management of stormwater in the City is ongoing and is expected to be completed by the end of the 2002 and reported on early in 2003.

The cost of the 25-year Implementation Plan is estimated to be \$1.035 billion for Capital Works. The implementation of these new capital works will generate operational and maintenance costs estimated to be \$228 million over the 25 years with an estimated \$18 million per year by the end of the 25-year plan. The financial impact on the average home owner will be in the range of \$30 to \$90 per year depending the funding option(s) recommended.

A final WWFMMP report is scheduled to be completed by the end of December at which time it will be submitted for an obligatory 30 day review under the Class Environmental Assessment process.

A supplementary report to Works Committee will be submitted to summarize feedback received from the recent City-wide Public Workshops on the Preferred Strategy, the 25-Year Implementation Plan and the Wet Weather Flow Management Policy. The last workshop takes place on October 28, 2002.

Contact:

Mr. M. D'Andrea, P. Eng.
Manager, Infrastructure Asset Management
Telephone (416) 397-4631, Fax (416) 392-3974; e-mail: mdandre@city.toronto.on.ca

Wayne Green, P. Eng.
Director Quality Control and System Planning
Telephone (416) 392-8242, Fax (416) 392-9791; e-mail: wgreen@city.toronto.on.ca

(Report dated November 4, 2002, addressed to the Works Committee from the Commissioner of Works and Emergency Services entitled, "Preferred Strategy and 25-Year Implementation Plan for the City of Toronto Wet Weather Flow Management Master Plan - Supplementary Report (All Wards)")

Purpose:

To report on feedback received from the most recent public consultation meetings on the Wet Weather Flow Management Master Plan which ended October 28, 2002, and to advise on the adjustments made to the 25 Year Implementation Plan as a result of the feedback received.

Financial Implications and Impact Statement:

The financial implications of the Wet Weather Flow Management Master Plan was provided in the report to Works Committee, dated October 29, 2002. Implementation of the Wet Weather Flow Management Master Plan will have an additional financial impact estimated at \$12 million, on the Water and Wastewater Services Capital Budget, over the \$1.035 billion previously identified, to address further improvements to water quality within the Ashbridges Bay/Coatsworth Cut area.

Recommendations:

It is recommended that:

- (1) this report be received for information;
- (2) the Wet Weather Flow Management Master Plan Budget allocation, within the Water and Wastewater Services Capital Budget, for the years 2008 to 2012 be increased by \$12 million for additional storage/treatment required for the remaining storm sewer discharging into Ashbridges Bay/Coatsworth Cut; and
- (3) the appropriate City officials be granted the authority to give effect thereto.

Background:

A report, dated October 29, 2002, titled "Preferred Strategy and 25 Year Implementation Plan for the City of Toronto Wet Weather Flow Management Master Plan" from the Commissioner of Works and Emergency Services which summarizes the Wet Weather Flow Management Master Plan, the 25 Year Implementation Plan, financial implications and a Wet Weather Flow Management Policy has been submitted for the Works Committee meeting on November 6, 2002. Subsequently, feedback from the five public workshops held across the City in late October 2002, has been received and this supplementary report has been prepared to respond to and address some of the key issues which have arisen.

Comments:

The WWFMMP is being developed on a watershed basis and as such the City was divided into five study areas, and the waterfront as follows:

- (i) Study Area 1 - Combined Sewer Service Area;
- (ii) Study Area 2 - Etobicoke Creek and Mimico Creek Watersheds;
- (iii) Study Area 3 - Humber River Watershed;
- (iv) Study Area 4 - Don River Watershed;
- (v) Study Area 5 - Highland Creek and Rouge River Watersheds; and
- (vi) Waterfront [from Etobicoke Creek in the west to Rouge River in the east].

Study Areas 2, 3, 4 and 5 do not have any combined sewers, they contain only separated sewer systems: sanitary and storm sewers.

In general, feedback received from the public consultation process indicated that most people supported the direction and approach being taken, focusing on the following benefits:

- (i) taking the initiative, showing awareness for the issues, and developing a plan;
- (ii) tangible five-year implementation schedule;
- (iii) the recognition of the importance of public education and community involvement;
- (iv) improvements to water quality and recreational opportunities; and stream and habitat restoration; and
- (v) inclusion of the “905” area municipalities in the analysis.

In addition, useful feedback was received on potential funding mechanisms being considered for the Master Plan implementation.

However, several issues were raised with respect to the recommended strategy for Study Area 1 (Combined Sewer Service Area) and the waterfront. These issues pertain to the rate of plan implementation and proposed measures in the areas of: source controls, road sewer separation and waterfront management. The following summarizes the concerns raised and how the issue has been addressed through revisions to the Wet Weather Flow Management Master Plan.

(1) Source Controls:

Concern:

Concerns have been raised that given the importance of source controls, their implementation should be accelerated, in particular roof downspout disconnection, in helping to achieve the objectives of the Plan and reducing the size of end-of-pipe facilities, especially in the combined sewer service area.

Background:

Source controls are measures implemented on private property to reduce the volume of stormwater runoff (through increasing infiltration into the ground or evapotranspiration by plants) or prevention of pollutants being washed off by stormwater runoff. Public feedback questioned whether these measures could be implemented at a faster rate for Study Area 1 and whether the Master Plan should aim for a higher participation rate.

The Master Plan, as developed, has included two levels of participation: voluntary and enhanced.

The “participation rate” is the percentage of properties expected to implement the noted stormwater management measure. For example, the voluntary level of downspout disconnection proposed for the residential sector is 40 percent over the next 25 years. This represents a significant increase over present conditions wherein only an estimated ten percent to 15 percent of homes across the City have their downspouts disconnected. An enhanced level of 75 percent participation is proposed in areas of the City undergoing intensification (as documented in the Official Plan, recently approved by City Council). There are also over 60 other source control measures proposed in the Plan. These measures are specific to property types and a specific level of participation has been

proposed for each. For example the following participation rates have been proposed within the single family residential sector: rain barrels - 15 percent; pervious driveways - 15 percent; minor lot re-grading - five percent; stormwater soak-away pits - five percent; foundation drain disconnection - three percent, and stormwater gardens - one percent.

The benefits of source control measures were recognized from the outset of the Plan development process, irrespective of the type of sewer system servicing the area: separated or combined. The expected participation rate has therefore been a key decision point. For example, the sizing (and therefore costing) of end-of-pipe facilities, necessary to achieve the Plan objectives, has been determined on the basis of a 40 percent uptake on the downspout disconnection program for all existing properties. This rate of uptake, particularly in the downtown core, is considered extremely ambitious and perhaps unrealistic given that roof downspout disconnection is not possible on all properties. For example, where the flow from a disconnected downspout can only be routed onto a driveway or other hard surface which drains towards the street, the disconnection provides no benefit because the flow is intercepted by roadside catchbasins and routed directly into the City's sewer system.

Achieving the uptake rates proposed in the combined sewer service is particularly important given the City's legislative requirements in achieving the Ontario Ministry of the Environment's prescribed levels of combined sewer overflow control. The work in this area has, therefore, been advanced as a first priority in the Plan implementation.

At present the Plan proposes an expanded public education and community outreach program as a means to achieve this higher level of participation. In addition, the City's present downspout disconnection program which is fully funded by the City, at no cost to the property owner, and includes an inspection by City staff (to assess whether the disconnection is practical), the physical disconnection of the downspouts with elbows and extensions as may be required and the provision of one rain barrel be continued and offered to all residential property owners.

Response:

Given the urgency in achieving this target within the combined sewer service area, a particular focus is required over the first ten years of the Plan implementation. The rate of uptake and the corresponding improvements in sewer flow reductions from the source control program will be monitored, and the success of these programs in achieving the Plan's targets will be reviewed and reported to this Committee on an annual basis as part of a proposed annual update report.

(2) Road Sewer Separation:

Concern:

Concerns have been raised that the preferred strategy (Strategy 5a) for the combined sewer service area does not include sewer separation (i.e., construction of new storm sewers to intercept road drainage).

Background:

At the master planning level, where the strategies are developed on a watershed basis, the assessment and evaluation of Strategy 5a (opportunistic road sewer separation) and Strategy 5b (complete road sewer separation) showed that the environmental benefits in the long term were the same. However, in the short term, Strategy 5a provides more environmental benefits than Strategy 5b with less social impacts and significantly lower cost. This was attributed to the fact that while the volume of combined sewer overflows is reduced, combined sewer overflows are not eliminated and because stormwater is polluted, this flow must also be treated to achieve the same environmental benefits of Strategy 5a. While the cost of end-of-pipe facilities is marginally reduced, this is overshadowed by the significant additional cost of road sewer separation and the provision of additional treatment facilities for the intercepted road drainage.

Based on these findings, complete road sewer separation contained in Strategy 5b cannot be justified on a technical or economic basis. As a result, Strategy 5a is being recommended as the preferred strategy in Study Area 1 (the combined sewer area). Nevertheless, in the next phase (Phase 3) of the Class Environmental Assessment Process, for each end-of-pipe facility proposed, a more detailed analysis is required to fully assess all design alternatives.

Response:

It is proposed that at the next phase of the Class Environmental Assessment Process, for end-of-pipe facilities proposed for combined sewer service areas which abut separated sewer service areas, the option of separating the road drainage from the combined sewer service area and routing it to the abutting separated storm sewer and providing an equivalent level of treatment to this intercepted flow as would be provided by the original end-of-pipe facility proposed, be reviewed and assessed in more detail. Consistent with the Class Environmental Assessment process, this analysis will require further review and input from the public, in particular the local community.

(3) Waterfront Management:

There were two issues raised about waterfront management: the proposed concept for a deflector arm (shoreline extension) structure and the need to address impairment of water quality in Ashbridges Bay.

Shoreline 'Deflector Arm':

Concern:

Concerns have been raised that the proposed deflector arms are redirecting the problem and there may be impacts on aquatic habitat and long shore sediment transport processes.

Background:

Through the development of the Master Plan, computer simulation modelling was used to assess the effectiveness of the various control measures and strategies in improving water quality along the waterfront, in particular the beaches. It was soon realized that while the Master Plan provides for control of City sewer outfalls which directly impact the beaches, these improvements are masked by the impacts of watersheds, which extend well beyond the City limits. In particular, flows from the Humber River will continue to impact water quality along the Western Beaches and similarly, the flow from Etobicoke Creek will continue to impact the Marie Curtis Park beaches, even with the implementation of the 100 year plan .

The concept of a “deflector arm/fishing pier structure” was evaluated and the computer simulation results demonstrate that it can significantly improve water quality along the Western Beaches and Marie Curtis Park Beach West. Achieving the Plan’s beach water quality improvement objectives within the 25 year implementation plan cannot be realized without these structures.

Response:

If properly designed, the proposed deflector arms could be integrated as multifunctional shoreline features, providing fish habitat below water and recreational amenities above water, while improving water quality along the City’s prized beaches and are therefore being recommended. However, they too are subject to a review and analysis through the Environmental Assessment process and \$40 million associated with implementation has been redirected from the years 2003-2007 to the years 2008-2012.

Shoreline ‘Ashbridges Bay/Coatsworth Cut’:

Concern:

Concerns were raised that the 25 Year Implementation Plan would not improve water quality in the Ashbridges Bay/Coatsworth Cut to the same degree as area beaches.

Background:

Three combined sewer overflows and one storm sewer currently discharge into the Ashbridges Bay area. The 25 Year Implementation Plan proposed to remediate the discharge of the combined sewer overflows in compliance with the Ontario Ministry of the Environment requirements. However, the Plan did not attempt to achieve body contact recreational criteria within this time frame, because no beaches have been designated within this embayment.

Public feedback received indicated that the Bay is used extensively by canoeing clubs and other uses in which humans are in contact with the water. Achieving this higher level of water quality improvements is possible if the storm sewer discharge is also controlled. This would require an additional storage/treatment system.

The next phase of the Class Environmental Assessment for this facility would determine which type of system should be implemented: an underground storage tank, a constructed wetland (which would use part of the existing Bay), or a flow-balancing system (the City presently has two such facilities within existing embayments along the waterfront).

Response:

The 25 Year Implementation Plan has been modified accordingly to include a stormwater treatment facility at Ashbridges Bay/Coatsworth Cut in the 2008-2012 time period at an estimated cost of \$12 million.

(4) Rate of Plan Implementation:

Concern:

Public feedback requested that consideration be given to accelerating the implementation of the whole Master Plan including: source controls, conveyance controls, end-of-pipe controls, stream restoration, and operation and maintenance practices in order to accelerate improvements in receiving waters.

Response:

The Master Plan and its 25 Year Implementation Schedule are feasible and hence appropriate, given the target spending level for Plan implementation and the need to build up the City's capacity for implementing the various projects since significant time will be needed in the first several years for the completion of the next phases of the Class Environmental Assessment process, preliminary design, detailed design and final agency approvals. In addition, the 25 Year Implementation Schedule has included projects which provided the greatest return on investment in terms of environmental improvement while addressing human health and safety and infrastructure protection concerns.

(5) Funding Mechanisms:

Concern:

In reviewing potential funding mechanisms presented, concerns were raised about the potential impact on property taxes.

Background:

The potential funding mechanisms which have been reviewed and presented to the public are: included in the water rate; property taxes; user charges; development charges; grants subsidies and partnerships.

General support was received for “inclusion in the water rate” and “user charges”, with specific comments of “do not include on property taxes”. Of special note were comments directed to the ability to use incentives and penalties as a part of a “user pay” principle, especially where implementation of source controls may be accelerated through an appropriate incentive structure.

Response:

A joint report from the Chief Financial Officer and the Commissioner of Works and Emergency Services recommending a funding mechanism for the implementation of the Wet Weather Flow Management Master Plan over the next 25 years will be submitted to this Committee and the Policy and Finance Committee in early 2003.

Conclusion:

Public consultation workshops held across the City to receive comments on the Wet Weather Flow Management Master Plan preferred strategy, the 25-Year Implementation Plan, potential funding mechanisms and a Wet Weather Flow Management Policy were completed October 28, 2002. Concerns have been expressed in the areas of: source controls, road sewer separation and waterfront management and the plan implementation schedule. These concerns have been addressed through adjustments to the 25 Year Implementation Plan. A copy of this 25 Year Implementation Plan and maps showing the locations of proposed stormwater management measures has been provided separately to Committee members and provided to the Clerk’s Office.

Contact:

Mr. M. D’Andrea, P. Eng.
Manager, Infrastructure Asset Management
Telephone (416) 397-4631, Fax (416) 392-3974; e-mail: mdandre@city.toronto.on.ca

Wayne Green, P. Eng.
Director, Quality Control and System Planning
Telephone (416) 392-8242, Fax (416) 392-9791; e-mail: wgreen@city.toronto.on.ca

(Report dated November 5, 2002, addressed to the Works Committee from the Commissioner of Works and Emergency Services entitled, "Receiving Ontario Ministry of the Environment Funding for the City of Toronto Wet Weather Flow Management Master Plan (All Wards))

Purpose:

To assess the degree to which the recommended Preferred Strategy and 25 Year Implementation Plan for the City of Toronto Wet Weather Flow Management Master Plan (WWFMMP) achieves the objectives of the Toronto and Region Remedial Action Plan.

Financial Implications and Impact Statement:

There is no financial impact to the City of Toronto resulting from adoption of this report.

Recommendations:

It is recommended that:

- (1) authority be granted to accept funding in the amount of \$200,000 from the Ontario Ministry of the Environment (MOE) to fully fund an assessment of the degree to which the Wet Weather Flow Management Master Plan - 25 Year Implementation Plan meets the Toronto and Region Remedial Action Plan Objectives, and to enter into a Memorandum of Understanding with the MOE to carry out the assessment; and
- (2) the appropriate City officials be granted the authority to give effect thereto.

Background:

A report dated October 29, 2002, titled "Preferred Strategy and 25 Year Implementation Plan for the City of Toronto Wet Weather Flow Management Master Plan" from the Commissioner of Works and Emergency Services summarizes the Wet Weather Flow Management Master Plan and the 25 Year Implementation Plan. As a part of the technical studies undertaken in the WWFMMP, computer simulation models were used to predict expected improvements in water quality along the waterfront and area watercourses.

The Ontario Ministry of the Environment have agreed to provide \$200,000 in funds to the City of Toronto to fully fund an assessment of the degree to which Remedial Action Plan objectives are met through the implementation of the proposed WWFMMP 25 Year Implementation Plan.

Comments:

The City of Toronto is identified as one of the remaining 16 Canadian Areas of Concern (AOC) within the Great Lakes Basin, due to degraded environmental conditions along the waterfront and area watercourses. Remedial Action Plans (RAPs) have been developed to restore the beneficial uses within each Area of Concern. Restoration actions include improvements to

municipal or industrial wastewater treatment plant discharges, stormwater and combined sewer overflows, aquatic and wildlife habitat improvements, and sediment remediation.

There are still several “beneficial uses” which still remain impaired in Toronto, largely attributed to impacts from wet weather flow impacts from the City of Toronto and area watersheds which extend beyond the City limits.

Through the Ontario Ministry of the Environment, the Canada Ontario Agreement Fund is being used to help accelerate work to restore the environmental quality of Canada’s Areas of Concern. The Ontario Ministry of the Environment recognizes that the implementation of the City’s WWFMMP will make a significant contribution to achieving RAP objectives and wishes to have an assessment made of the degree to which Remedial Action Plan objectives are met through the implementation of the 25 Year Implementation Plan.

Conclusion:

The 25-Year Implementation Plan of the Wet Weather Flow Management Master Plan (WWFMMP) will make a significant contribution to achieving the objectives of the Toronto Remedial Action Plan. Funds provided by the Ontario Ministry of the Environment will be used to assess the degree to which the WWFMMP achieves RAP objectives. Authority is requested to receive these funds and enter into a Memorandum of Understanding with the Ontario Ministry of the Environment to carry out the assessment.

Contact:

Mr. M. D’Andrea, P. Eng.
Manager, Infrastructure Asset Management
Telephone (416) 397-4631, Fax (416) 392-3974; e-mail: mdandre@city.toronto.on.ca

(City Council, at its regular meeting held on November 26, 27 and 28, 2002, had before it, during consideration of the foregoing Clause, a communication (November 20, 2002) from Councillor Case Ootes, East York, submitting information with respect to his attendance at the Great Lakes Mayors’ Initiative 2002, held on November 7, 2002, in the City of Chicago.)