TORONTO

REPORT FOR ACTION

Update on the Development of the TOcore Water Strategy

Date: September 20, 2017
To: City Council
From: General Manager, Toronto Water
Wards: 20, 27, 28

SUMMARY

As requested by the Planning and Growth Management Committee, this report has been prepared to update City Council on the development of the TOcore Water Strategy and water and wastewater infrastructure assessments in the Downtown. This report highlights the work completed to date and next steps. This report is supplementary to the report entitled "TOcore: Proposed Downtown Plan," dated August 18, 2017, from the Chief Planner and Executive Director, City Planning.

Toronto's Downtown is serviced by a complex system of underground water and wastewater infrastructure, including watermains and sewers, respectively, as well as pumping stations. Over time, the capacity of the existing water and wastewater infrastructure is being consumed by population growth. Inflow and infiltration of stormwater into the sewer systems is also consuming capacity in these systems.

Toronto Water is planning for growth and addressing other infrastructure needs in the Downtown by undertaking water and wastewater infrastructure assessments to identify infrastructure needs and solutions. These assessments will be a key component of the Toronto Water Infrastructure Strategy (i.e. TOcore Water Strategy) that is being developed to link the provision of water and wastewater infrastructure with growth in the Downtown and to support the effective implementation of TOcore.

RECOMMENDATIONS

The General Manager, Toronto Water recommends that:

1. City Council receive this report for information.

FINANCIAL IMPACT

This report has no financial impacts.

DECISION HISTORY

On December 13, 2016, City Council requested that the General Manager, Toronto Water bring forward the TOcore Water Strategy and a detailed implementation plan, congruent with the draft Downtown Secondary Plan that clearly links the provision of water and wastewater infrastructure with growth. The Council decision can be viewed at: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.TE20.18

On September 7, 2017, Planning and Growth Management Committee adopted a motion by Councillor Shiner that requested the General Manager, Toronto Water, report directly to the October 2, 3 and 4th, 2017 meeting of City Council with an update on current water studies being undertaken in the Downtown as well as the emerging TOcore Water Strategy. The Committee decision can be viewed at: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PG22.1

COMMENTS

Background - Servicing Growth in the TOcore and Downtown Area

TOcore is serviced by a complex system of underground water and wastewater infrastructure including watermains, and sanitary, combined, and storm sewers, respectively, as well as above-ground pumping stations, which have a finite capacity. The rate of population growth planned for the Downtown has the potential to reach 475,000 people by 2041. Employment within the Downtown is also anticipated to rise.

The pace and magnitude of growth that is occurring within the Downtown is consuming the capacity of the water and wastewater systems faster than projected and in some cases placing unanticipated stress on these systems due to the increased height and density of many of the proposed developments. Developments in the Scott Street Sewage Pumping Station service area have also been under a focused assessment to determine how to best allocate the remaining capacity. Groundwater has also become an issue for new developments in the Downtown which will require appropriate management.

The incremental increases in density that are occurring in the Downtown, and the design of infrastructure in conjunction with development proposals on a site-by-site basis, does not address capacity issues within the sewer catchment areas that service the Downtown in a comprehensive manner. The ever increasing density puts water and wastewater systems under further stress. It is essential to more closely align the rate of population growth through appropriate planning controls to ensure that the ability to improve existing infrastructure to accommodate additional population can keep pace. Toronto Water and City Planning will need to work closely together to achieve this goal.

Development of the TOcore Water Strategy

Toronto Water is currently preparing the TOcore Water Strategy to service future growth in the Downtown and to support the effective implementation of TOcore, with a report

back to City Council planned in the second quarter of 2018. The TOcore Water Strategy will consist of two key components:

- **Water and Wastewater Infrastructure Assessments** - this includes wastewater infrastructure Master Plan EA studies and technical assessments that identify water and wastewater infrastructure deficiencies and required infrastructure improvements to service future growth in the TOcore area and the Downtown to 2041; and,

- **Implementation Strategy** - a process to prioritize, coordinate, and fund the identified water and wastewater infrastructure improvements (from completed EAs and other assessments) in order to ensure that the infrastructure is in place to service future growth, when it is required.

Water and Wastewater Infrastructure Assessments

The first component of the TOCore Water Strategy involves the undertaking of a number of infrastructure assessments to identify deficiencies in the City's water and wastewater systems that would constrain the system's ability to service future growth in the TOcore area, as well as the broader downtown area. Using hydraulic computer models, the existing infrastructure is assessed to determine if there is enough capacity to accommodate additional population. If there is not enough capacity, the models can then be used to identify any necessary improvements required to support future growth.

Major EA studies and technical assessments in the Downtown include:

- **Consolidation & Update of Existing Sewer Hydraulic Models** - Toronto Water has completed an update of a wastewater hydraulic model that is used to identify deficiencies for trunk and local sewers throughout the city, including the downtown area, and is based on the City's design criteria and 2041 future growth scenarios. A preliminary list of sewer deficiencies and upgrades required in the downtown to accommodate growth to 2041 has been identified. This modelling work will also inform the EA studies below.

- **Basement Flooding Protection EA Studies (Areas 42, 44 and 62) -** these Environmental Assessment studies under the Basement Flooding Protection Program will assess the sewer and storm drainage systems, and overland flow capacity and recommend infrastructure improvements to reduce flooding during severe storms using specified wet weather criteria. The studies will also assess the impacts of future growth on these systems. EAs for Study Areas 42, 44 and 62 are planned to commence in 2018 and are estimated to take four years to complete.

- **Waterfront Sanitary Servicing Master Plan (WSSMP) Update -** an EA study is being undertaken to update the 2012 WSSMP and the preferred servicing solution in order to provide sanitary servicing capacity for development along the city's waterfront, (including the Scott Street Pumping Station service area) to 2041. Completion of the WSSMP Update is expected by the end of 2017. A Public Information Event will be held in fall 2017 to present and receive feedback on the preferred servicing strategy.

- **Water Distribution Study for Pressure Districts 1, 1W, and 2 -** in 2016, Toronto Water completed a functional and calibrated hydraulic model for watermains, including those in the Downtown. The hydraulic model was used to determine if any existing watermains need to be improved to support Downtown population growth using the 2041 population projections. The existing distribution watermain system can generally accommodate future growth based on water demand for domestic use without major improvements. However, it is expected that improvements to the water system will be required to accommodate future growth based on water demand for fire suppression.

- **Toronto Optimization Study** - this study is reassessing the performance of the transmission watermain system in the City and will identify deficiencies for resolution. The study is expected to be completed by the end of 2017.

In addition to the above EAs and technical assessments, the development of the TOcore Water Strategy is considering the following influences and initiatives that may impact its implementation. These influences and initiatives include:

- A review of the Development Charges bylaw is currently underway, which is considering recommended improvements to local watermains to accommodate future growth based on water demand for fire suppression;

- New guidelines for assessment criteria concerning discharges to the City's sanitary and combined sewer systems, which is currently being developed by Toronto Water with a staff report planned to City Council by the end of 2017;

- A new groundwater management policy to manage groundwater from developments to the City's sewer systems, which is currently being developed by Toronto Water for 2018;

- City projects to manage wet weather flows (e.g. Don River and Central Waterfront Project) and future initiatives to reduce inflow and infiltration (I/I) in the City's wastewater infrastructure, which would provide the opportunity to reduce the potential upsizing of infrastructure;

- New Ministry of the Environment and Climate Change requirements for stormwater management, which will be incorporated in an update to the City's Wet Weather Flow Management Guidelines (expected in 2018); and,

- Determination of population projections that coincide with the end of lifecycle for new infrastructure (i.e. 50 to 100 years from now). This information would be used to optimize the upsizing of infrastructure where required.

Implementation Strategy

The second component of the TOcore Water Strategy is an Implementation Strategy. The Implementation Strategy will outline a process to prioritize, coordinate, and fund the identified water and wastewater infrastructure upgrades from completed EAs and other

technical assessments, in order to ensure that the infrastructure is in place to service future growth for the TOcore and the Downtown when it is required.

The development of the Implementation Strategy is underway. Implementation considerations include:

- Need to prioritize and schedule water and wastewater infrastructure upgrades based on areas of high growth;
- Coordination of infrastructure upgrades through the City's existing capital coordination process that is led by the Major Capital Infrastructure Coordination (MCIC) Office, working with City divisions, the Toronto Transit Commission, utility companies and others to minimize construction disruption to traffic and the public; and,
- Accommodation of funding for infrastructure improvements that support future growth, through the use of development charges or funded as local improvements by the developer, depending on the scope of the improvements.

Next Steps

Key next steps in developing the TOcore Water Strategy include:

- Preparation of a draft TOcore Water Strategy in Fall 2017;
- Consultation with the public and other stakeholders in late 2017/early 2018 (in coordination with City Planning and other divisions) to receive feedback on the draft TOcore Water Strategy; and,
- Revisions and finalization to the TOCore Water Strategy that incorporates comments received through the consultation process and submission to City Council in the second quarter of 2018.

In addition to the development of the TOcore Water Strategy, Toronto Water will be completing ongoing EA studies, e.g. the Waterfront Sanitary Servicing Master Plan Update and commencing new infrastructure assessments in late 2017 and in 2018.

CONTACT

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SIGNATURE

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