



# CITY OF BRANTFORD MASTER SERVICING PLAN TRANSPORTATION MASTER PLAN ENVISIONING OUR CITY:2041

**June 9, 2020 & June 30, 2020 – Virtual Public Information Centre (PIC)  
Frequently Asked Questions (FAQ) Document – Master Servicing Plan (MSP)  
Posted on July 28, 2020**

## **1 Introduction**

The Master Servicing Plan, or MSP, is one of several studies being undertaken by the City of Brantford to help identify the City's long-term growth needs. The goal of the MSP is to develop a Long-Term Servicing Strategy for the City's water, wastewater, and stormwater infrastructure. The servicing strategies have been developed to ensure the maintenance of services for existing users and to support future growth.

The objective of this document is to answer questions submitted by the public, prior to July 21<sup>st</sup>, in response to the Virtual PIC originally posted on June 9<sup>th</sup>, 2020 and Virtual PIC Questions and Answers originally posted July 30<sup>th</sup>. This document is the third and final step of the Virtual PIC process.

## **2 Frequently Asked Questions**

Numerous questions and comments have been submitted to the Project Team throughout the first Virtual Public Information Centre process. The questions and comments received up to July 21<sup>st</sup>, 2020 have been responded to and grouped into various themes in the sections below.

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## **2.1 Analysis Approach and Alternatives Development**

### **2.1.1 How were the capacities and existing flows and demands of the water, wastewater, and stormwater system determined?**

The City collects and maintains an extensive amount of data relating to the existing condition and performance of its sewers, watermains, and facilities.

This information ranges from detailed inventory and construction records, sewer and facility inspection records, maintenance records, water billing records, in system flow readings, rain water gauges and system performance testing among others.

The balance of these available data sources are used to determine the existing system capacities and existing system flows and demands.

Further, the City maintains and continually updates several tools that are used to help track and monitor the water, wastewater, and stormwater system performance. These include hydraulic models of the City's water, wastewater, and stormwater systems, as well as, capacity tracking and allocation tools.

For example: to evaluate the existing flows and available capacity of the wastewater sewers, the City's wastewater system hydraulic model is used. The wastewater model includes a representation of every sewer, pump station, and forcemain within the City.

The available capacity of the sewers was determined through a review of individual sewer construction, inspection, and maintenance records, while the most recent pump station performance and capacity testing was used to determine the available capacity at each pump station.

System flows were estimated using a combination of historic water billing records, in system flow monitoring records, and pump station and wastewater treatment plant flow records. The hydraulic model is then used to evaluate the existing system performance and to evaluate how the system is likely to perform under various flow conditions.

### **2.1.2 What opportunities were considered to optimize the performance of the existing water, wastewater, and stormwater systems?**

One of the Master Servicing Plan (MSP) objectives is to maximize the capacity of the existing systems and facilities.

Opportunities that were explored included sewer diversions to minimize upgrade needs, optimization of facility operations, system and facility rehabilitation, and wet weather flow reduction.

### **2.1.3 How were existing forecasted capital projects considered in the Master Servicing Plan (MSP)?**

As part of the MSP (Master Servicing Plan), the City's existing capital projects, from the 2014 Master Servicing Plan and the 10 year capital forecast, were reviewed.

For planned rehabilitation projects, where an increase in capacity was not identified, the Master Servicing Plan (MSP) reviewed to confirm if the proposed sizing remained sufficient or if there was an opportunity to upgrade by deferring upgrade needs elsewhere in the system.

For planned upgrade projects, the Master Servicing Plan (MSP) reviewed to confirm if the proposed project is still required, and if it is needed, to confirm the recommended upgrade capacity.

### **2.1.4 Why were there more or different needs as compared to the 2014 Master Servicing Plan (MSP)?**

The 2014 Master Servicing Plan (MSP) outlined the City's infrastructure needs to address growth to 2031 within the City's previous municipal boundary.

This Master Servicing Plan (MSP) update addresses: growth to 2041, revised growth projections, increased intensification, and servicing of the boundary expansion lands.

Since the completion of the 2014 Master Servicing Plan (MSP), the City has:

1. Reviewed and updated the City's design criteria and system performance objectives to better service existing and future users and to better address issues related to system resiliency, risk, and climate change;
2. Collected additional information, updating the City's understanding of the existing water, wastewater, and stormwater system capacities and performance, and
3. Completed several system upgrades and modifications recommended in the 2014 Master Servicing Plan (MSP).

As a result of the updated growth horizon, updated design criteria, and updated system understanding, the Master Servicing Plan (MSP) update has identified additional needs.

For Example, in Pressure District 4, the 2014 Master Servicing Plan (MSP) projected limited employment growth, as such, no water storage needs were triggered. Under the revised 2041 growth scenario there is a substantial increase in the Pressure District's 4 residential and employment growth.

These additional growth needs combined with the City's revised storage requirements and the 2018 expansion of Pressure District 4's service area have triggered the need for additional Storage within Pressure District 4.

## **2.2 Water and Wastewater Servicing**

### **2.2.1 How will the future service areas or catchments be determined?**

The Master Servicing Plan (MSP) has identified provisional service areas and catchments. Service areas and catchments within the existing system are expected to remain generally unchanged.

Service areas and catchments within the proposed urban boundary expansion lands were identified based on existing ground elevations, identified natural heritage systems, and existing City infrastructure capacities.

Allowances for limited local grading, in order to simplify servicing and minimize the total number of pump stations and stormwater management ponds, was considered.

Further, an evaluation of servicing strategies was completed in the context of providing the best overall City-wide approach including allowances for the servicing of all lands within the City's municipal boundary. The evaluation of servicing concepts considered technical, environmental, social cultural, and life cycle cost factors.

The service areas and catchments are expected to be further reviewed and finalized as part of the Block Planning process for the expansion lands, or as part of the draft plan/ site plan process for developments within the City's existing urban boundary.

Changes to the preliminary service areas and catchments will be reviewed and considered based on their merits, provided they do not restrict the serviceability of adjacent lands and there is sufficient system capacity.

### **2.2.2 How are the water and wastewater servicing going to cross the river to service development off of Hardy Road?**

The City's northwest, including the Oak Park and Hardy Road area, are serviced by an existing trunk watermain and trunk sewer crossing the Grand River.

The existing trunk watermain and trunk sewer have sufficient capacity to support the expected growth within their respective service areas; including growth in the north expansion lands. As such, no new Grand River crossings are proposed.

**2.2.3 Can you clarify the new Pressure District 2/3 (PD2/3) water tower need and service area? Can you clarify the new Pressure District 4 (PD4) water tower need and service area?**

When projecting 2041 system storage needs, storage deficits were identified for all Pressure Districts, including Pressure District 1, Pressure District 2/3, and Pressure District 4. The preliminary recommended strategy is as follows:

- Pressure District 4 deficit will be addressed by constructing with a new Water Tower. The new Water Tower is expected to have an operating level of approximately 300 to 304 meters and will address growth needs within the projected Pressure District 4 service area; which consists of the expansion lands west of Balmoral Drive.
- The Pressure District 2/3 deficit will be addressed by replacing the existing King George Tank with a new Elevated Tower. The new Elevated Water Tower is expected to have an operating level of approximately 282 to 285 meters; which is an increase from the existing King George Tank to allow for improved system performance. Further, to address post 2041 servicing needs for the remaining expansion lands, strategic oversizing of the tank is required. To optimize the performance of the system and to minimize total infrastructure costs, this surplus storage capacity in Pressure District 2/3 will be utilized to address the Pressure District 1 storage deficit.
- Pressure District 1 storage deficit will be addressed by accessing the surplus storage capacity in Pressure District 2/3 via improved valving capacity at the existing Wayne Gretzky and Tollgate Pump Stations; until such time that the Pressure District 2/3 surplus can no longer address the Pressure District 1 needs; which is not expected to occur before 2041. Alternatives and associated projects to address Pressure District 1 storage needs after 2041 will be reviewed in future Master Servicing Plan (MSP) updates.

Environmental Assessment Studies will be required to determine the final Elevated Tower Locations.

**2.2.4 Can you clarify the wastewater servicing strategy for the Fifth Avenue Pumping Station?**

The Master Servicing Plan (MSP) update recommends upgrading the Fifth Avenue Pumping Station to support existing peak flow requirements and to provide additional capacity to support planned growth.

The City has already commenced the pump station upgrade process, additional information can be found on the Fifth Ave Pump Station Project Page: <https://www.brantford.ca/en/fifth-ave-pumping-station-project-update.aspx>.

### **2.2.5 Can you clarify the wastewater servicing strategy for the Empey Pumping Station?**

Upgrades to the Empey Pumping Station will be required to support the balance of anticipated growth out to 2041. The City will continue to use the existing pumping station allocation policy to track and allocate available growth capacity to the Empey Pump station. The preliminary Master Servicing Plan (MSP) update implementation plan has flagged Empey pump station upgrades to be completed within the next 10 years.

## **2.3 Stormwater Servicing**

### **2.3.1 Can you provide further detail regarding the Local Stormwater Servicing for identified Greenfield Growth Areas?**

It is noted that the stormwater servicing strategies presented in the Master Servicing Plan (MSP) update are preliminary and will be subject to modifications following additional investigation and evaluation.

Stormwater servicing of future planned greenfield development will be subject to the development of local stormwater management plans through the block plan process; which will require approval from the City and Grand River Conservation Authority if applicable.

Any previously approved stormwater management plans will remain valid.

### **2.3.2 What is the City doing to preserve existing natural streams within the proposed expansion area?**

All existing year-round creeks and streams have been identified and incorporated into the City Natural Heritage Networks, which are protected from development and enclosure.

As part of the Official Plan and Master Servicing Plan Studies, a headwater drainage feature assessment, consistent with the Toronto and Region Conservation Authority and Credit Valley Conservation (2014) Headwater Drainage Feature Guideline, was completed for all existing ephemeral streams (stream that have intermittent flows). This assessment provides preliminary guidance on the existing condition, function, and ecologic value of the existing ephemeral streams and was used to identify which features will need to be maintained in their current locations, which features will need to be maintained as an open channel but can be moved, and which features can potentially be enclosed.

Further to the work undertaken under the Official Plan and Master Servicing Plan Studies, developers will need to undertake Block Plan Studies that include the development of local stormwater management plans. The final management approach for any existing feature not already included within the City Natural Heritage Networks will be identified within the stormwater management plans and will require approval from the City and the Grand River Conservation Authority.

## **2.4 Growth**

### **2.4.1 Can you provide additional information regarding land use, growth assumptions, Special Policy Areas, etc.?**

The Master Servicing Plan (MSP), update is one of several studies being undertaken by the City to help identify the City's long-term growth needs. The goal of the MSP is to develop a Long-Term Servicing Strategy for the City's water, wastewater, and stormwater infrastructure.

The MSP update strategy was developed to accommodate the projected land use and growth as identified in the City 2020 Draft Official Plan. Please refer to the City's [2020 Draft Official Plan](#) for further clarification on land use, growth, Special Policy Areas, and other related items.

### **2.4.2 How were the impacts of growth and upgrade needs determined and evaluated? Including evaluation of downstream impacts?**

The City's existing water, wastewater, and stormwater system hydraulic models, and capacity tracking and allocation tools were used to assess the potential impacts of growth on the existing system and to identify the potential upgrade needs.

For example, to assess the impacts of growth on the wastewater system, a review of the new service areas was completed to identify the potential servicing area and likely connection to the existing wastewater system.

Once completed, the estimated growth and new service areas were converted to potential flows utilizing the City's design criteria as outlined in the City's Linear Design and Construction Manual. The resulting flow projections were added at the appropriate locations within the hydraulic model and allocation tool to determine the potential impacts on the existing wastewater system and to identify any downstream restrictions.

If local or downstream capacity restrictions were identified, then appropriate servicing concepts and alternatives were developed and evaluated in accordance with the process described on slide I-5. The servicing review of growth areas within the proposed urban boundary expansion areas were completed based on the existing ground elevations, identified natural heritage system, and existing City infrastructure capacities.

Allowances for local grading, in order to simplify servicing and minimize the total number of pump stations and stormwater management ponds, was considered. Further, an evaluation of servicing strategies was completed in the context of providing the best overall City-wide approach, including allowances for servicing of all lands within the City's municipal boundary.

#### **2.4.3 How will future routing of infrastructure through the expansion lands be determined?**

The Master Servicing Plan (MSP) has identified conceptual water, wastewater, and stormwater servicing for the expansion lands including trunk infrastructure requirements. The Master Servicing Plan (MSP) capital program includes provisional routing of trunk infrastructure along the proposed arterial and collector roads.

Final routing of trunk infrastructure will be identified as part of the block plan process.

#### **2.4.4 How is growth beyond 2041, and the remaining City lands being considered?**

Only upgrades triggered by the 2041 growth scenario were included in the final preliminary preferred alternative presented in this PIC.

However, for all new infrastructure and upgrade projects, the full buildout within the City's Boundary was considered to ensure all identified infrastructure was sufficiently sized to support growth needs beyond 2041 and/or configured to allow phased expansion.

Infrastructure requiring oversizing to meet growth beyond 2041 will be identified in the final Master Servicing Plan (MSP) capital program.

#### **2.4.5 How will the expansion lands be serviced?**

The expansion lands Water servicing is presented on slide MSP -12. Several separate water servicing components are recommended that collectively make up the overall preferred strategy.

The main components to make up the preliminary preferred strategy are as follows:

- Increased treatment capacity at the Holmedale Water Treatment Plant,
- New water tower in Pressure District 2/3 to accommodate storage deficiencies in both Pressure District 2/3 and Pressure District 1,
- New water tower in Pressure District 4,
- Upgrades at Wayne Gretzky and Tollgate Pump Stations within Pressure District 2/3,
- Upgrade trunk watermain in Pressure District 1 to Tutela and the downtown,
- Upgrade watermain north to expansion lands along King George Road and upgrade watermain east-west along Lynden Road and Fairview Drive in Pressure District 2/3
- Upgrade watermain north to expansion lands along Oak Park and Paris Road in Pressure District 4
- Decommissioning of existing King George tank and Albion Pump Station.

The expansion lands Wastewater servicing is presented on slide MSP-25.

In general, the expansion lands will integrate directly into the City's wastewater system at five key connection points:

- The Oak Park trunk sewer, that will service the majority of the lands west of King George,
- The Coulbeck trunk sewer, which will service the remaining growth lands east of King George,
- The Lynden Road sewers, which will service the East Expansion Lands,
- The Mt. Pleasant Road sewer, which will service Tutela, and
- The Woodlawn Pump Station, which will provide limited servicing to the directly adjacent lands.

The expansion lands Stormwater servicing is presented on slide MSP-36. It is noted that the stormwater servicing strategy for the expansion lands are preliminary and will be subject to modifications following more a detailed block-level management plan.

In general, the expansion lands will be required to meet the following requirements:

- Minor system designed to meet a 5-year design flow,
- Peak flowrates at outlets will be controlled to have post-development flowrates controlled to the pre-development peak flowrate,
- The major systems will be required to convey the 100-year design storm,
- Water quality will be of concern in the expansion lands,
- The MECP Enhanced Removal of 80% Total Suspended Solids is the requirement for all new expansion land developments,
- Multiple subcatchments outlet to coldwater creeks and will require thermal mitigation,
- Erosion control will also be required

**2.4.6 Slide MSP-12 provides an “arrow” extending beyond the City limits for Park Road North, what does this arrow mean?**

The servicing arrows shown on all boards, including MSP-12, are intended to show the conceptual servicing of the area and not a representation of actual alignments.

The arrow in light and dark purple within the north expansion lands indicates potential direction for road connections inside and outside of the municipal boundary beyond the 2041 growth horizon.

It is anticipated that all future municipal servicing to 2041; including the trunk watermain extensions from the existing City’s system to the expansion lands will be accommodated within the City’s municipal boundary.

**2.5 Additional Studies**

**2.5.1 For the identified Environmental Assessment Studies, what options will be considered?**

For projects requiring Environmental Assessment Studies, the Master Servicing Plan (MSP) will identify the infrastructure’s general capacity and servicing requirements.

The Environmental Assessment will consider all viable alternatives that meet those identified capacity and servicing requirements.

For example; the Oak Park trunk sewer and watermain extension Environmental Assessment will consider all viable alternatives to connect the existing trunk infrastructure south of Highway 403 to the expansion lands north of Powerline; this includes full and partial alignments along Oak Park Road and Powerline, and alignments through the future development areas.

**2.5.2 How will the City coordinate with existing/near term development projects?**

For recommended water and wastewater projects, the City will coordinate with existing and near-term projects as part of the standard draft plan and site plan process.

For the identified stormwater needs, the City plans to initiate further area specific studies before proceeding with the implementation of any Master Servicing Plan (MSP) recommendations. Coordination and consultation will occur as part of these subsequent studies.

## **2.6 Timing and Triggers**

### **2.6.1 When will the recommended upgrades be triggered or implemented? How will the City track the available capacity of the existing water/wastewater/ and stormwater infrastructure?**

The final Master Servicing Plan (MSP) capital program will identify upgrade triggers and preliminary timing based on current planning projections. For existing infrastructure, the City utilizes its existing allocation and capacity tracking tool to monitor available capacity vs. committed and requested growth allocations.

Once the identified capacity triggers for infrastructure have been achieved, the City will initiate appropriate planning, design, and construction processes which are subject to available approvals, timing, and resources.

## **2.7 Costs**

### **2.7.1 Can the City provide further details on the proposed upgrades? Are cost estimates available for the preliminary recommended alternatives**

Further project details, including cost estimates, will be provided in the final Master Servicing Plan (MSP) capital program; which will be available for public review and comment as part of the final Master Servicing Plan (MSP) document's 30 day review period.

### **2.7.2 How will the project funding or development charges eligibility/contributions be determined?**

The final Master Servicing Plan (MSP) capital program will provide estimated project costs as well as identifying project objectives and triggers.

Following the completion of the Master Servicing Plan (MSP) and Transportation Master Plan (TMP), the City will be undertaking a Development Charge Background Study, a Water and Wastewater Rate Study, and a Financial Plan Update; these studies will be used to update the City's existing Development Charges, and Water and Wastewater Rates.