



## Memo DRAFT

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**To:** David Sajecki, MCIP, RPP, Brooke McIlroy, Project Manager – Burlington Mobility Hubs

**From:** E. André Poirier, P. Eng. Water & Wastewater Infrastructure Planning Engineer

**Date:** September 15<sup>th</sup> 2017

**File:** TPB178008S

**cc:** Ron Scheckenberger, P. Eng., Amec Foster Wheeler

**Re:** **Water and Wastewater Servicing Considerations – Burlington Downtown Mobility Hub**

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### Background

The Burlington Downtown Mobility Hub is one of four planned mobility hubs in the City of Burlington. The mobility hubs are part of a comprehensive intensification strategy that is integral to Burlington's economic development priorities.

The Downtown Mobility Hub is a 176 ha neighbourhood area located in Downtown Burlington and includes the Lakeshore area from Burlington Beach to Martha Street and centered at Brant Street and James Street. Planning estimated for the overall area have not been finalized. A recent estimate based on the proposed ground floor area and residential units suggests the Downtown Mobility Hub lands will support a population of 20,000. At this time the distribution of the population within the proposed lands is not finalized.

Water and Wastewater infrastructure in Burlington is owned, planned and managed by Halton Region. Halton Region's planning framework to service the growth is through its Master Plan which was last updated in 2011. Infrastructure Planning in Halton has focused on a sustainable regionalized approach in which growth in the Region is serviced by the Lake Based System. In this planning framework, trunk infrastructure for water wastewater infrastructure is designed and planned in the South (near Lake Ontario) and moves up Northward into branches into the primary growth areas in North Oakville, North Burlington, Milton and Halton Hills/Georgetown. Our understanding of the infrastructure is based on the following:

- ) Review of the Water & Wastewater Models Provided by Halton Region in 2017;
- ) Review of the 2011 Halton Region Water & Wastewater Master Plan;

Additional information and engagement with Halton Region will be undertaken to clarify our understanding of the system as part of the Mobility Hub Infrastructure Planning process.

### **Wastewater Servicing Considerations**

The mobility hub is situated near an 1800 mm trunk sanitary sewer that conveys flows for treatment in the Skyway Wastewater Treatment Plant as shown in Figure 1. This is a large capacity system that is designed to take on flows from most of the Skyway Wastewater Treatment Plant Service Area. This sewer runs through the mobility hub lands and will form the primary outlet to the collection system for the proposed development in the Downtown mobility hub.

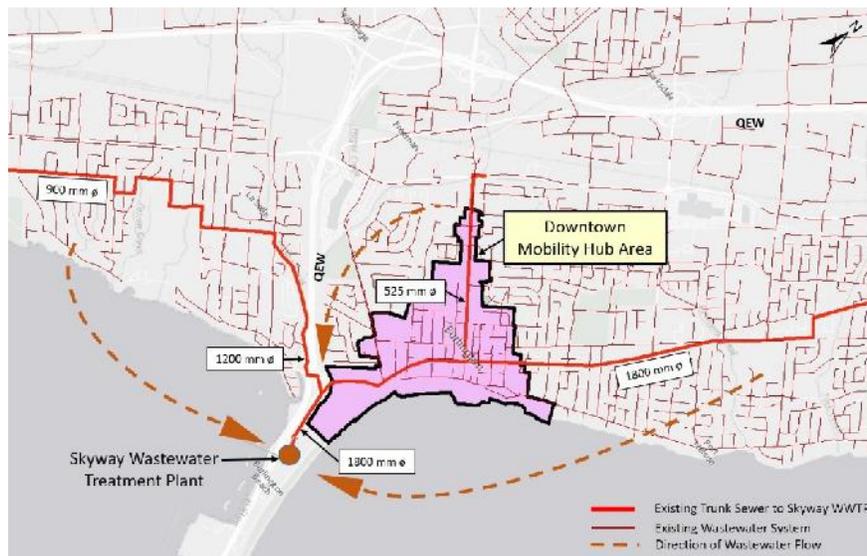


Figure 1 Existing Sanitary Services in and around the Downtown Mobility Hub Planning Area

In general, lands to the North of Lakeshore, can be expected to have gravity sewer services that will connect to the 1800 mm trunk sanitary sewer. Lands to the South of Lakeshore may be too low to be serviced by gravity.

There is an existing sewage pumping station servicing the properties to the South of Lakeshore located near Lakeshore Blvd and the Creek to the West of Torrance Street. The existing local sanitary sewers are shown in Figure 2.

### **Future Wastewater Servicing Needs**

Future services required for intensification in the Downtown Mobility Hub would include:

**Local Sewer Conveyance** – Local sewers in the downtown mobility hub may need to be upgraded to provide capacity. The local network improvements will be planned when the distribution of the population is given. Conveyance will focus on connection to the 1800 mm trunk sewer.

**Pumping Requirements** – The lands to the South of Lakeshore may require pumping improvements which could include the replacement of the existing pumping station with another

solution for the entire area. Note that areas in the western Lakefront currently have no local sewers and may require a pumping solution.

**Existing and Planned Trunk Collection and Treatment:** The existing and planned trunk and wastewater collection and treatment infrastructure in Halton and within the Skyway Wastewater Treatment Plant Service area will benefit the intensification in the Downtown Mobility Hub. Intensification will take up some of the planned and existing capacity in these systems. As such, it is anticipated that development changes will include a life-cycle component for these systems. This is to be determined in consultation with Halton Region.



Figure 2 Existing Sanitary Sewers within the Downtown Mobility Hub Planning Area

### Water Servicing Considerations

The Downtown Mobility Hub lands are located within the Burlington Zone 1 (BZ1) Water distribution Zone. This is part of Halton’s Integrated Lake Based Water Supply System. Water supply within BZ1 and the integrated urban system is supplied by the following plants:

- ) Burlington Water Treatment Plant (263 ML/d),
- ) Burloak Water Treatment Plant (55 ML/d<sup>1</sup>), and the
- ) Oakville WTP (109 ML/d)

The total water treatment capacity of 432 ML/d within the Lake Based Treatment Systems can easily meet the needs of a population of approximately 800,000. System capacity expansion is reviewed by Halton Region through a Master Planning process where upgrades are triggered by growth in demand and development.

The Integrated Lake Based System in and around the Downtown Mobility Hub is shown in Figure 3. The Downtown Mobility Hub’s location within BZ1 is near the trunk of the Halton Lake

<sup>1</sup> The Burloak WTP was constructed in 2006-2010 with an initial capacity of 55 ML/d and plans to increase capacity to service growth in Halton Region as per the 2011 Master Plan. Confirmation as to the status of the Burlington WTP capacity is being sought at this time from Halton Region.

Based System. An initial review of the water main configuration suggests that the primary source of treated water would be the Burlington WTP, but that there are several interconnection opportunities within Oakville and Burlington Zone 1 that would allow for conveyance of treated water from the other plants to service an increased demand associated with intensification.

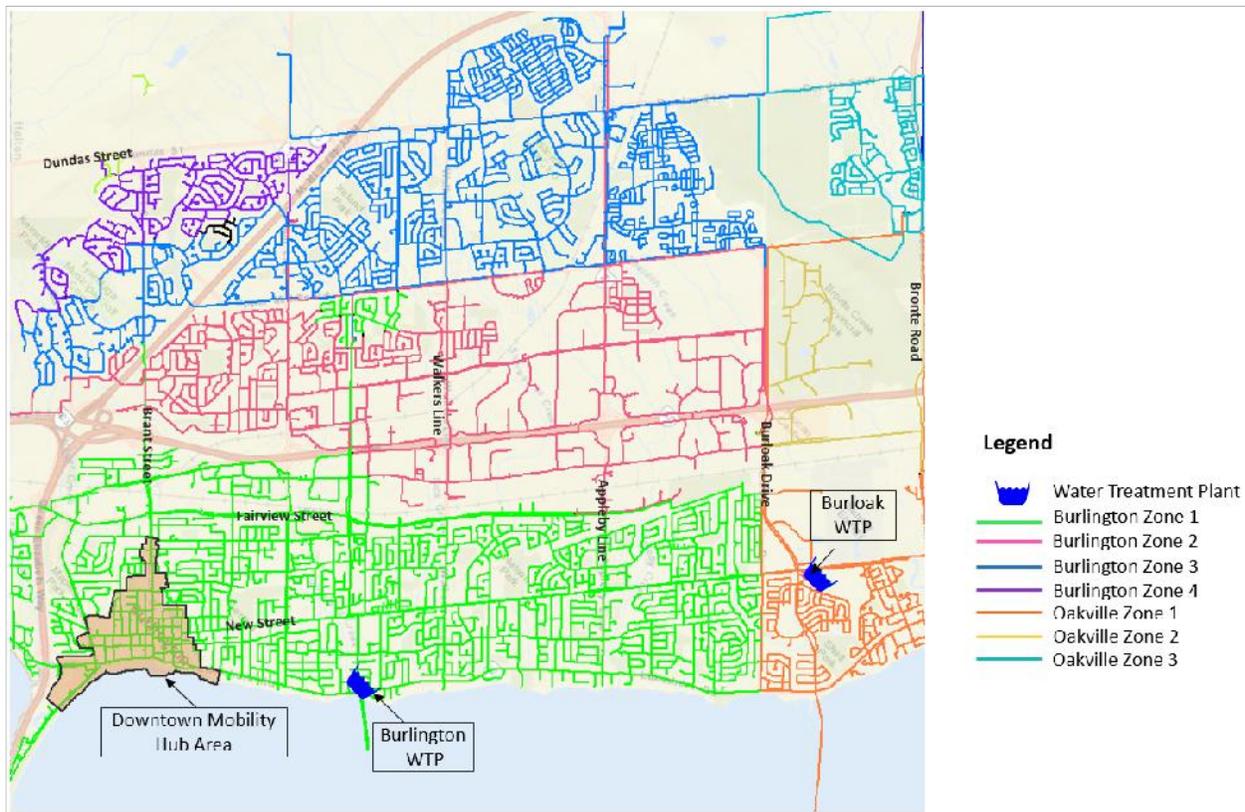


Figure 3 Existing Water System in and around the Downtown Mobility Hub Planning Area

### **Future Water Servicing Needs**

Future services required for intensification in the Downtown Mobility Hub would include:

**Local Conveyance System Improvements:** The local conveyance system will need to be analyzed to ensure that the system can meet local fire flow requirements can be delivered with the existing pipe system;

**Existing and Planned Treatment, Distribution and Storage:** The existing and planned trunk and water distribution, treatment and storage infrastructure in Halton's Lake Based System will benefit the intensification in the Downtown Mobility Hub. Intensification will take up some of the planned and existing capacity in these systems. As such, it is anticipated that development charges will include a life-cycle component for these systems. This is to be determined in consultation with Halton Region.