

To:	Roman Kuczynski	Date:	October 06, 2023
From:	Justin Lee	Subject:	Water and Wastewater Commentary for Town of Caledon Servicing analysis for Potential Employment Conversions
CC:	Kamal Adhikary	Our File:	

SUMMARY

The high-level water and wastewater servicing analysis for potential employment conversions for the two employment conversion sites in the Town of Caledon for provided potential low and high growth scenarios were investigated. The employment conversion sites is located in SGU C0444 and SGU C1120. There is only one low and high growth scenarios in Caledon were provided.

The additional water demand as well as wastewater flows in these sites, as compared to approved growth scenarios, were estimated for both low and high growth scenarios for respective subject sites. The potential impacts based on the high-level analysis to the Region water and wastewater systems for the subject Sites are as follows:

1. Wastewater Servicing:

The capacity of existing/planned wastewater system was modelled based on the estimated population/wastewater flows discharging to the planned 525/675mm sewer on King Street and Humber Station Road in the area. The following are the high-level conclusions and recommendation for wastewater servicing to the sites:

- i. Employment Conversion Sites: With the proper sizing of the planned 525/675mm sewer on King Street and Humber Station Road wastewater infrastructure will be sufficient to accept the potential employment conversions in the subject sites for both low/high growth scenarios

2. Water Servicing:

The capacity of water system was investigated based on the estimated population/water demands supply through planned PZ6 and 7 water infrastructure (750mm PZ6E water main on King St, 600mm PZ6B water main and New booster pumping station in the vicinity of King St and Emil Kolb Pkwy) in the area. With the proper sizing, the planned water system will be sufficient to accept the potential employment conversions in the subject sites for both low/high growth scenarios. The following are the high-level conclusions and recommendation for water servicing to the sites:

- i. Employment Conversion Sites: With the proper sizing of the planned PZ6 and 7 water infrastructure (750mm PZ6E water main on King St, 600mm PZ6B water main and new booster pumping station in the vicinity of King St and Emil Kolb Pkwy) in the area, will be sufficient to accept the potential employment conversions in the subject sites for both low/high growth scenarios

The required planned wastewater and water infrastructure to service these sites are DC eligible. Therefore, the employment conversion lands could proceed. It is recommended that detailed modeling and hydraulic analysis be undertaken at the time a development is proposed.

The recommendations could change should the population estimates change based on a review of the potential impacts of these new numbers.

1 INTRODUCTION

The Town of Caledon provided the Region with two scenarios of potential employment conversions within two select sites within the Town for the purposes of high-level water and wastewater infrastructure capacity assessment. The sites are located in SGU C0444 and SGU C1120. The Region’s Water and Wastewater Infrastructure Planning have investigated to provide an overview of the water and wastewater impacts of potential employment conversions for the two select sites.

The revised distribution for servicing analysis for low and high growth scenarios and corresponding population provided by the Town for each site are summarized below in Table 1. Low and High Growth Scenarios for Caledon are the same.

Table 1. Summary of the population by Growth Distribution Scenarios for Employment Conversion Study 2023

Site (SGU ID)	Approved						Revised Distribution for Servicing Analysis											
	Population			Employment			Low Growth Scenario			High Growth Scenario								
	2031	2041	2051	2031	2041	2051	2031	2041	2051	2031	2041	2051	2031	2041	2051	2031	2041	2051
Site located in SGU C0444	4,040	4,148	4,525	424	921	1,431	4,040	6,117	8,080	424	1,297	2,457	4,040	6,117	8,080	424	1,297	2,457
Site located in SGU C1120	0	0	0	179	262	280	0	258	515	0	0	0	0	258	515	0	0	0
Caledon Sub-Total	4,040	4,148	4,525	603	1,183	1,711	4,040	6,375	8,595	424	1,297	2,457	4,040	6,375	8,595	424	1,297	2,457

Table 2 summarizes the estimated water demands and wastewater flows generated by the additional low and high growth scenarios to get a high-level understanding of the scale of wastewater flows based on the information provided:

Table 2. Estimated water demands and wastewater flows from low/high growth scenarios

Sites (SGU ID)	Growth Year	Approved				Low/High Growth Scenario			
		Growth Population	Growth Peak Wet Weather Flow (L/s)	Growth Water Demands		Proposed Growth Population	Growth Peak Wet Weather Flow (L/s)	Growth Water Demands	
				Average (L/s)	Maximum Day Demand (MDD)(L/s)			Average (L/s)	Maximum Day Demand (MDD)(L/s)
Site located in SGU C0444	2031	4,464	82.3	13.9	24.4	4,464	82.3	13.9	24.4
	2041	5,069	88.1	15.6	27.1	7,414	109.8	22.9	39.7
	2051	5,956	96.5	18.3	31.3	10,537	136.9	32.4	55.4
Site located in SGU C1120	2031	179	5.6	0.5	0.7	0	3.1	0.0	0.0
	2041	262	6.7	0.8	1.1	258	6.6	0.8	1.5
	2051	280	6.9	0.8	1.1	515	10.0	1.6	2.9

2 SERVICING ANALYSIS OF THE AREAS

2.1 Employment Conversion Sites Overview

- The sites is located in SGU C0444 and SGU C1120. Based on the information provided in Table 1, the total population with the low and high growth scenarios are well above the Region's 2051 anticipated growth within the area for the years 2031, 2041 and 2051. Both low and high growth scenarios are same for both sites. The potential impacts to the water and wastewater systems with the potential utilization of Low and High growth Scenarios in these sites was investigated.
- The additional water demand as well as wastewater flows in these sites, as compared to approved growth scenarios, were estimated for low/high growth scenarios for respective subject sites.
- There is existing water and wastewater infrastructure located in the vicinity of subject sites. There are also planned capital and/or master plan water and wastewater infrastructure improvements identified in the vicinity of subject sites.
- The capacity of wastewater systems was modelled based on the wastewater flows discharging on existing sewer in the area.
- The capacity of existing/planned water system was investigated based on the estimated population/water demands supply through existing PZ6 and PZ7 water infrastructure in the area.
- The map showing the site, additional water demands and wastewater flows, existing /proposed infrastructure and high-level conclusions and recommendations for the existing water and wastewater servicing to the sites are provided separately in the Appendix 1 for the subject sites.

3 CONCLUSIONS AND RECOMMENDATION

- Wastewater Servicing for Employment Conversion Sites: With the proper sizing of the planned 525/675mm sewer on King Street and Humber Station Road wastewater infrastructure will be sufficient to accept the potential employment conversions in the subject sites for both low/high growth scenarios.
- Water Servicing for Employment Conversion Sites: With the proper sizing of the planned PZ6 and 7 water infrastructure (750mm PZ6E water main on King St, 600mm PZ6B water main and New booster pumping station in the vicinity of King St and Emil Kolb Pkwy) in the area, will be sufficient to accept the potential employment conversions in the subject sites for both low/high growth scenarios.

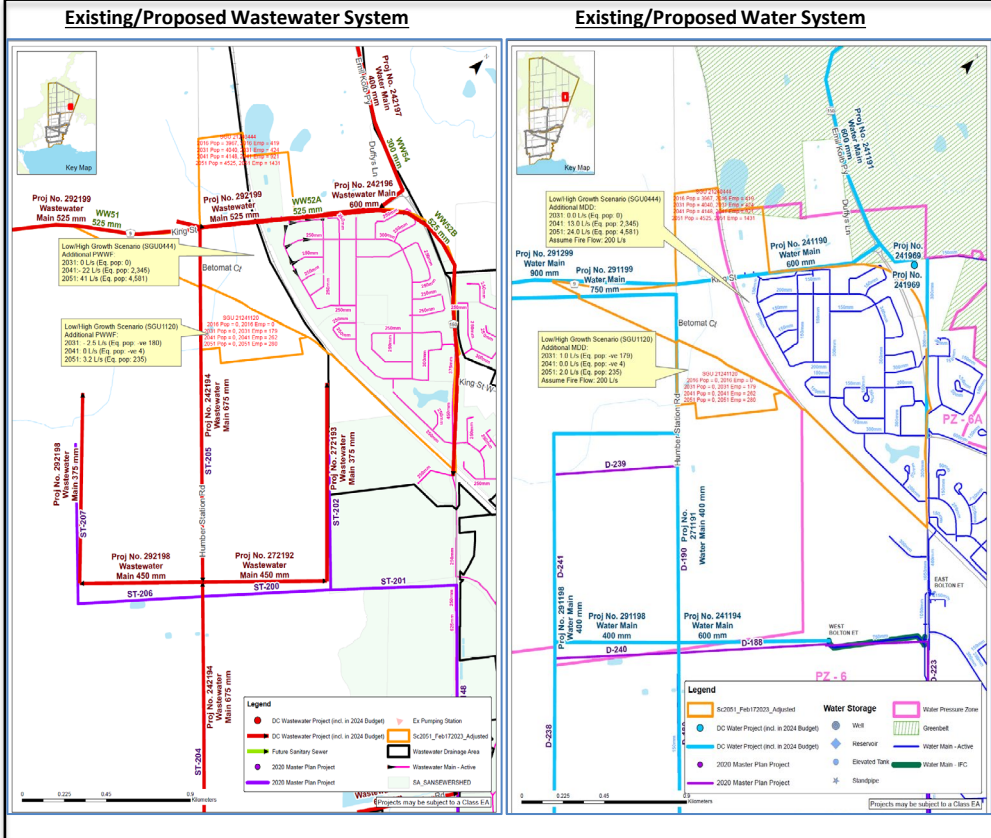
The required planned wastewater and water infrastructure to service these sites are DC eligible. Therefore, the employment conversion lands could proceed. It is recommended that detailed modeling and hydraulic analysis be undertaken at the time a development is proposed.

The recommendations could change should the population estimates change based on a review of the potential impacts of these new numbers.

Consideration of Potential Employment Area Conversion Results

Appendix I Growth Distribution Scenarios for Employment Conversion
Study 2023 – Employment Conversion Sites (Town of Caledon)

Development Concept	Growth Distribution Scenarios for Employment Conversion Study 2023 in Two SGUs in Town Of Caledon
Development Area	One Site located in SGUC0444, and Other Site located in SGUC1120
Equivalent SGU Population (Year) - Approved	SGU C0444: 4,464 (2031); 5,069 (2041); 5,956 (2051) SGU C1120: 179 (2031); 262 (2041); 280 (2051)
Equivalent SGU Population (Year) – Low/High Growth	SGU C0444: 4,464 (2031); 7,414 (2041); 10,537 (2051) SGU C1120: 0 (2031); 258 (2041); 515 (2051)
Ultimate Population	8,375



Potential Wastewater Servicing Strategy:

- The sites located within the Coleraine (COLER) sewershed area, and discharges via McVean/East Trunk sewer system GE Booth Wastewater Treatment Facility.
- **Existing/ Proposed Infrastructure:**
 - Exiting 375/525mm sanitary sewer on Coleraine Drive
 - Construction of 675/750mm sewer on Humber Station Rd to service future development in west Bolton (Design 2024, Service Year 2026)
 - Construction of a 525/600mm sanitary sewer on King Street between The Gore Rd and Emil Kolb Pkwy to service future development in west and north Bolton (Design 2024)
 - Construction of a 375mm sanitary sewer to service future development in west Bolton (Service Year 2027/2033)
- **Servicing Request:** The intent is to investigate the impacts to the wastewater system with the potential utilization of Low and High Scenario for these Sites
- **Infrastructure Planning Review:**
 - The capacity of wastewater system was investigated based on the estimated population/wastewater flows discharging on planned 525/675mm sewer on King St and Humber Station Rd in the area. With the proper sizing, the planned wastewater system will be sufficient to accept the potential employment conversions in the subject sites for both low/high growth scenarios
 - The required planned wastewater infrastructure to service these sites are DC eligible. It is recommended that detailed modeling and hydraulic analysis be undertaken at the time a development is proposed for these lands and local servicing is developed.

Potential Water Servicing Strategy:

- The sites is located in water pressure zone # 6 and 7
- **Existing/ Proposed Infrastructure:**
 - Exiting 300mm distribution water main in area and 1050mm sub-transmission on Coleraine Dr (PZ-6)
 - Proposed water infrastructure to service future development areas:
 - 1500mm PZ6B transmission main from 1050mm main north of King St to North Bolton Booster Pumping Station (BPS) (Design 2024, Service Year 2026)
 - 600mm PZ7B water main on King St from future North Bolton BPS to Humber Station Rd (Design 2024, Service Year 2026)
 - 400mm PZ6B water main on Humber Station Rd from future 400mm main on future street north of Healey Rd (Service Year 2029)
 - 900- mm PZ7E transmission main on King St from future Sandhill Pumping Station to future Macville Elevated Tank (Design 2032, Service Year 2030)
 - 750mm PZ6E water main on King St from future Sandhill Pumping Station to Humber Station Rd (Design 2032, Service Year 2034)
 - 600mm PZ6B water main on a future street from West Bolton Elevated Tank to future 600mm water main on Humber Station Rd (Service Year 2026)
 - New booster pumping station in the vicinity of King St and Emil Kolb Pkwy to service future development in west and north Bolton (Design 2024, Service Year 2026)
- **Servicing Request:** The intent is to investigate the impacts to the water system with the potential utilization of Low and High Scenarios
- **Infrastructure Planning Review:**
 - The capacity of water system was investigated based on the estimated population/water demands supply through planned PZ6 and 7 water infrastructure (750mm PZ6E water main on King St, 600mm PZ6B water main and New booster pumping station in the vicinity of King St and Emil Kolb Pkwy) in the area. With the proper sizing, the planned water system will be sufficient to accept the potential employment conversions in the subject sites for both low/high growth scenarios.
 - The required planned water infrastructure to service these sites are DC eligible. It is recommended that detailed modeling and hydraulic analysis be undertaken at the time a development is proposed for these lands and local servicing is developed.