



**TRITON
ENGINEERING
SERVICES
LIMITED**
Consulting Engineers

105 Queen Street West, Unit 14
Fergus
Ontario N1M 1S6
Tel: (519) 843-3920
Fax: (519) 843-1943
Email: info@tritoneng.on.ca

ORANGEVILLE • FERGUS • GRAVENHURST

April 23, 2020

Township of Southgate
R.R. #1
185667 Grey Road 9
DUNDALK, Ontario
N0C 1B0

ATTENTION: Jim Ellis,
Public Works Manager

RE: TOWNSHIP OF SOUTHGATE
DUNDALK WATER AND SEWAGE
TREATMENT SYSTEMS
RESERVE HYDRAULIC CAPACITY
OUR FILE: A4160(20)-R04

Dear Sir:

The attached tables outline the 2020 reserve capacity calculations for the water supply and sewage treatment systems in Dundalk. The reserve capacities have been calculated in accordance with Ministry of Environment and Climate Change (MOECC) guidelines. 50 new residential units were occupied and connected to the municipal systems in Dundalk in 2019.

Water System:

The three (3) year average maximum day flow of the water system increased from 770 m³/d to **795m³/d** over the past year. The 2020 uncommitted reserve capacity of the water system is **1,886** equivalent residential units (ERUs). This is based on the Townships' amount of water taking permitted by the Permit to Take Water and draft plan approved/committed developments as outlined in Table 3. The Permit to Take Water, indicates an allowable water taking of 2,817m³/day. Please refer to Tables 1 and 3 for the water system capacity calculations.

Sewage Treatment Facility:

Table 2 summarizes the sewage treatment reserve capacity calculations for 2020. The three-year annual average day flow increased from 1,086m³/day to **1,129 m³/d**. The 2020 uncommitted reserve capacity for the sewage treatment facility is **413** new development ERUs which is slightly more than the 2019 reserve capacity of 410 units.

It is important to note that Flato Phases 2-6, and the remainder of White Rose Phase 1 and 2 are included as committed development in the calculation, therefore they will not come out of the 413 ERUs.

Recommendation:

Following Council's review and adoption of the attached report, we would recommend that a copy of the report be forwarded to the MECP District Office in Owen Sound and the Grey County Planning Department. We trust you will find the enclosed to be in order. Should you have any questions, please do not hesitate to contact this office.

Yours very truly,

TRITON ENGINEERING SERVICES LIMITED

A handwritten signature in black ink, appearing to read 'Ray Kirtz', is centered below the company name.

Ray Kirtz, P. Eng.

cc: Dave Milliner, Township of Southgate
Clinton Stredwick, Township of Southgate
Bev Fisher, Township of Southgate

**TABLE 1
TOWNSHIP OF SOUTHGATE
2020 RESERVE CAPACITY - DUNDALK WATER SYSTEM**

DESCRIPTION	2020
1. Available Capacity ¹	2,817
2. Max Day Flow (m ³ /d) ²	795
3. Reserve Capacity (m ³ /d) (1) - (2)	2,022
4. Serviced Households ³	928
5. Persons Per Existing Residential Unit (2017 Census Data)	2.6
6. Population Served (4) x (5)	2,413
7. Maximum Day Per Capita Flow (m ³ /d) (2) ÷ (6)	0.330
8. Additional Population that can be Served (3) ÷ (7)	6,133
9. Person Per New Development Residential Unit (Typical)	2.8
10. Additional New Development Residential Units that can be served. (8) ÷ (9)	2,190
11. Committed Development Equivalent Residential Units (Table 3)	304
12. Uncommitted Reserve Capacity New Development Equivalent Residential Units (10) - (11)	1,886
¹ Available Capacity is based on lesser of Firm Capacity or Permit to Take Water. Firm capacity is 2,819m ³ /day, PTTW is 2,817m ³ /d, Well Production is 4,780m ³ /day.	
² Max day flow is the average of the maximum day flows from 2017 (702m ³ /d), and 2018 (742m ³ /d) and 2019 (942m ³ /d)	
³ Serviced households as reported in the 2019 Annual Water Report.	

TABLE 2
TOWNSHIP OF SOUTHGATE
2020 RESERVE CAPACITY - DUNDALK SEWAGE TREATMENT FACILITY

DESCRIPTION	2020
1. Design Capacity of Sewage Treatment Facility (m ³ /d)	1,832
2. Average Day Flow ¹ (m ³ /d) (Average of 2016, 2017 and 2018 Average Flows)	1,129
3. Reserve Capacity (m ³ /d) (1) - (4)	703
4. Average New Development Per Capita Flow ² (m ³ /d)	0.350
5. Additional Population that can be Served (3) ÷ (4)	2,009
6. Person Per New Development Equivalent Residential Unit (Typical)	2.8
7. Additional New Development Equivalent Residential Units that can be Served (5) ÷ (6)	717
8. Committed Development Residential Units (Table 3)	304
9. Uncommitted Reserve Capacity New Development Equivalent Residential Units (7) - (8)	413
¹ Average of the average day flows in 2017 (1,168m ³ /d), 2018 (1,105m ³ /d) and 2019 (1,114m ³ /day)	
² As determined by new development flow analysis supported by flow monitoring program.	

**TABLE 3
TOWNSHIP OF SOUTHGATE
SUMMARY OF DEVELOPMENTS - 2020**

COMMITTED DEVELOPMENTS	TOTAL UNITS	UNITS OCCUPIED IN 2019	REMAINING UNITS AT END OF 2019
White Rose (Phase 1 & 2)	66	41	25
Flato West (Phase 1)	70	70	0
Flato East (Phase 2B)	38	29	9
Flato North (Phase 2A)	72	0	72
Flato North (Phase 3)	46	0	46
Flato North (Phase 4)	22	0	22
Flato North (Phase 5)	59	0	59
Flato North (Phase 6)	68	0	68
SUB-TOTAL		140	301
INFILL LOTS ¹	3		3
TOTAL COMMITTED UNITS			304
UNCOMMITTED DEVELOPMENTS (ESTIMATED)	TOTAL UNITS		
Flato Glenelg Residential Subdivision (Phase 1)	153		
Flato West Block 75 (Phase 2) Apartment Building ²	56		
White Rose (Phase 3)	101		
Flato East (All Remaining Phases)	460		
SUB-TOTAL	770		
¹ Assume 3 infill lots are built each year.			
² Apartment units based on assumption that each unit is 0.7 ERU.			