

Wastewater Servicing

Alternative Servicing Strategies Development Technical Memo Alternative 9 – Gordon / Southgate Hanlon Trunk

Project # TP168050; Client Name: City of Guelph

Prepared for:

City of Guelph

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1.0 Introduction

This technical memo presents Alternative 9 – Gordon / Southgate Hanlon Trunk, which sends all flows centrally to Gordon Street and avoids double pumping from one catchment to another.

The scope of this report involves the following:

- The preparation and evaluation of Wastewater Servicing Concept Alternative 9.
- Identification of the Capital Projects required to implement services for Alternative 9.
- The provision of an evaluation of Alternative 9 in terms of Cost Benefit.

Similar to all alternatives evaluated, Alternative 9 – Gordon / Southgate Hanlon Trunk is to be evaluated for the Clair Maltby Secondary Plan (CMSP) lands and include systems that are connected to the City's collection system via potential external receiving branches described in *Wastewater Servicing – Clair Maltby WW-1 Existing Conditions Design Criteria & Level of Service Objectives Report - Issued September 2018 and updated in March 2018 (WW-1 Report)*.

The evaluation of wastewater servicing alternatives is in support of the evolving planning framework driven by the Clair Maltby Secondary Planning Process. Concepts in this technical memo, as with other alternatives, represent the latest community structure provided in July 2018.

The following descriptions, figure, and tables related to Alternative 9 are to be inserted into the MESP in the sections indicated.

The following is to be inserted under section **3.2.4 Alternatives**

3.2.4.9 Alternative 9: Gordon / Southgate Hanlon

The Gordon / Southgate Hanlon alternative was developed in an attempt to eliminate in-line pumping as well as to alleviate some concerns with the alternatives previously evaluated.

This option has the main gravity trunk running along Gordon Street from Street D along Clair Road and ultimately to the final outlet located northeast of Hanlon.

The main trunk design meets the requirements in terms of the cover depth, slope range and minimum velocity. Based on the updated model, approximately 250m of trunk main would be deeper than 10m. In this alternative, SPS 1, 2 and 3 individually contribute local flows to the trunk main.

Capacities for SPS-1 and SPS-2 and slightly reduced while SPS-3 is greatly reduced, and this solution works from a downstream connection elevation standpoint.

Table 3.2.7 Pump and Forcemain Information for the Gordon / Southgate Hanlon Alternative

Alternative 9 – Gordon / Southgate Hanlon Trunk	
Total length of 200mm sewers	2.1 km
Total length of 300mm sewers	6.6 km
Total length of 375mm sewers	2.6 km
Total length of 450mm sewers	0.3 km
Total length of 600mm sewers	1.5 km
Total length of 750mm sewers	1.8 km
Total length of 900mm sewers	2.8 km
SPS-1 Capacity	19 L/s
SPS-2 Capacity	113 L/s
SPS-3 Capacity	21 L/s
FM-1 Diameter, Length	150 mm, 1.1 km
FM-2 Diameter, Length	300 mm, 1.6 km
FM-3 Diameter, Length	150 mm, 0.4 km



Figure 3.2.12 Alternative Solution 9 Gordon / Southgate Hanlon Trunk

The following is to be inserted under section **3.2.5 Economics of Wastewater Servicing Alternatives**

3.2.5.7. Alternative 9: Gordon / Southgate Hanlon Trunk

The Gordon / Southgate Hanlon Trunk alternative proposes to send all flows to a main central trunk on Gordon Street, eliminating double pumping and reducing the total amount of deep sewer installation.

The estimated capital cost for implementing this solution is \$28.6 Million as given in **Table 3.2.9**.

Table 3.2.9- Estimated Cost Alternative 9 Gordon / Southgate Hanlon Trunk

Gravity Sewers	\$19.6 Million
Sewage Pump Station (SPS) - 1	\$0.7 Million
Sewage Pump Station (SPS) – 2	\$2.9 Million
Sewage Pump Station (SPS) - 3	\$0.7 Million
Forcemain - 1	\$0.77 Million
Forcemain - 2	\$2.0 Million
Forcemain - 3	\$0.28 Million
Property Costs	\$1.6 Million
Total Cost for Gordon / Southgate Hanlon Trunk	\$28.6 Million
Estimated Annual O&M Costs	\$314 K per year