Hanley Park North Residential Subdivision

Servicing Report

November 2021

AINLEY GRAHAM & ASSOCIATES

CONSULTING ENGINEERS AND PLANNERS
COLLINGWOOD · BARRIE · BELLEVILLE · KINGSTON · OTTAWA

File No. 18578-1

Ainley GROUP CONSULTING ENGINEERS PLANNERS

1.0 INTRODUCTION

Ainley Group was retained to complete a preliminary servicing brief to be included with the submission of Draft Plan Application for the proposed Hanley Park North residential development. The purpose of the report is to summarize the servicing requirements for the proposed development and summarize reports prepared to support the application. The following services have been considered in this report:

- Transportation System
- Grading
- Stormwater Management
- Water Distribution System
- Sanitary and Storm Sewer Collection Systems

In addition, brief comments regarding individual utility distributions have also been provided. A number of figures have been prepared in order to facilitate future detailed design.

2.0 SITE DESCRIPTION

2.1 Existing Conditions

The property is legally described as part of Lots 14 and 15, Concession 1, former Township of Thurlow, now City of Belleville, Hastings County. The parcel of land is approximately 35.2 hectares (ha), 7.5 ha of which is developable. The property is proposed to extend from existing Tessa Boulevard and Spruce Gardens. The property is bounded to the west by the existing Mercedes Meadows residential development, and vacant lands to the north, east, and south.

The Bell Creek Wetland (BCW) occurs within the subject property. Only 7.5 ha of the property is considered developable due to the required setbacks associated with the wetland features.

The property is currently vacant and partially treed. The site is predominately flat with a slope to the southeast. Drainage is generally conveyed to the BCW.

A site location plan is attached to this report as **Figure 1.**

2.2 Proposed Conditions

The property is proposed to be developed with the following:

- Seventy-four (74) single family lots,
- Twenty-nine (29) townhouse lots,
- Park and parkette blocks (3,181 m^2),
- Stormwater management facility block (3,168 m^2),
- Walkways (418 m^2), and

- Approximately 720m of Municipal Road Allowance with 20m width.

The current conceptual development plan is attached to this report as **Figure 2**.

2.3 Existing Services

There is existing sanitary sewer, storm sewer, and watermain located within the Mercedes Meadows Residential Subdivision to the immediate western limits of this development. The sewers and watermain within Mercedes Meadows have been oversized in order to accommodate servicing the subject lands. The proposed development will be connected to the existing sanitary sewer, storm sewer, and watermain within Spruce Gardens and Tessa Boulevard.

3.0 TRANSPORTATION SYSTEM

The proposed development will be accessed from two locations: the existing eastern limits of Spruce Gardens and Tessa Boulevard. As the main portion of the development will only have one access (i.e. Tessa Boulevard), it is proposed to provide an emergency access to Haig Road for the development from Street 'A'. The emergency access will be through a 6.0m wide paved asphalt multi-use pathway, through an extension and upgrade of the existing Mercedes Meadows stormwater facility maintenance route (**Figure 2**).

The internal two-lane Municipal roadways Street 'A' and Street 'B', will be designed to meet the typical City of Belleville minimum standards for a local roadway, urban cross section with a 20m right-of-way as shown on **Figure 2**. The roadway will be designed to meet the typical local municipal minimum standards, or as recommended by the geotechnical investigation, for earth or rock as indicated below*:

40 mm	HL3 Surface Course, over
75 mm	HL8 Binder Course, over
150 mm	Granular 'A', over
350 mm	Granular 'B' Type II

*It should be noted that confirmation of the pavement structure will be required at the time of detailed design to ensure the minimal requirements are met for both earth and rock construction.

Canada Post will be circulated at the time of detailed engineering to determine the recommended location for the community mailboxes.

4.0 GRADING

Grading of the site will be determined during detailed design and will be based predominately on the following factors:

- Maintaining a minimum soil cover of 2.7m over the sanitary sewer at the required slopes necessary for gravitational flow to the main.

- Stormwater outfall to the proposed stormwater facility block in the southeast portion of the property (lands extending from Tessa Boulevard).

- Stormwater outfall to the proposed park block in the southeast portion of the property (lands extending from Spruce Gardens).

5.0 STORMWATER MANAGEMENT

The subject site lies within the Quinte Conservation Region. As such, the stormwater management requirements are subject to the Quinte Conservation Regional Event (100-year design storm). Quality control is subject to a 'level 1' treatment and quantity control measures are generally required to ensure post development discharge rates do not exceed pre-development rates.

A preliminary Stormwater Management Report has been prepared to accompany the application for Draft Plan Application. The report outlines that based on review of the Stanley Park Stormwater Management Report, it is our understanding that the Stanley Park facility was designed to overcontrol discharge rates allowing for proposed developments to the east (i.e. Mercedes Meadows, Hanley Park North) to convey stormwater directly to the Bell Creek System uncontrolled. As such, quantity control measures are not required, only conveyance of the quantity event. Quality control for the development is proposed to be provided in a wet pond facility within the SWM block at the southeast portion of the development (lands extending from Tessa Boulevard). For the lands extending from Spruce Gardens, quality control can be provided via a level spreader. Storm sewers will be provided through the development to convey stormwater toward the proposed SWM outfall. They will be designed per the City of Belleville standards for Municipal storm sewer. Further detail is provided in the report under separate cover.

6.0 WATER DISTRIBUTION SYSTEM

The proposed development will be serviced by the existing 200mm diameter PVC Municipal watermain within Spruce Gardens and the existing 300mm diameter PVC Municipal watermain within Tessa Boulevard, installed as part of the Mercedes Meadows Residential Development. It is proposed to connect to these mains to service the development with 200mm diameter PVC watermain. Further detail is provided in the Watermain Design Brief prepared under separate cover to support the proposed Draft Plan Application.

7.0 SANITARY COLLECTION SYSTEM

The proposed sanitary collection system is to consist of a standard gravitational design at a minimum depth of 2.7m. The sewer will be designed in accordance with typical municipal standards. The sewer is proposed to connect to the Spruce Gardens 200mm diameter PVC sanitary sewer, and Tessa

Boulevard 375mm diameter PVC sanitary sewer installed as part of the Mercedes Meadows Residential Development. This sanitary sewer was designed to be oversized in order to accommodate flows from the subject lands.

The sanitary flows will be conveyed to the Haig Road 600mm diameter sanitary sewer, which is part of the Bayshore Truck Sanitary Sewer. As of the fall of 2019, the Bayshore Truck Sewer catchment area appeared to be 90% built out. After completing flow monitoring of Mercedes Meadows, Haig Road, and Keegan Parkway (Bayshore Truck Sanitary Sewer Catchment Area) in winter 2018-2019, it was determined that the existing sewers will have adequate capacity for the additional proposed development of Hanley Park North. Further detail is provided in the sanitary flow monitoring memo prepared by Ainley Group and provided under separate cover.

8.0 UTILITY DISTRIBUTIONS

The electrical, telephone, gas and cable services for the proposed development will be installed within a joint utility trench. All electrical, telephone, gas and cable services will be designed by the various agencies and installed in accordance with their specifications. During detailed engineering design, the individual providers will be requested to provide layouts and a compiled plan will be included in the engineering plans.

The street lighting design and street light illumination plans will be completed in accordance with the municipal design standards and guidelines at the time of detailed design.

9.0 CONCLUSIONS

- Seventy-four (74) single detached residential lots and twenty-nine (29) townhouse lots are proposed within the development.

- Approximately 720m of Municipal Road allowance with 20m width is proposed as extensions of Tessa Blvd and Spruce Gardens as well as Street ‘A’ and Street ‘B’.

- A stormwater management facility block (3,160 m^2) is proposed within the development. A wet pond facility is proposed to provide quality control for the proposed portion of the development extending from Tessa Boulevard. Quality control measures for the lands extending from Spruce Gardens can be provided via an OGS unit or a small level spreader within the proposed parkland block. Quantity control is not required due to the proximity of Bell Creek; however, conveyance of the quantity event will be provided. Proposed storm sewers will be provided to direct stormwater toward the southeastern portions of the development areas and the ultimate outlet at Bell Creek.

- One (1) parkland block totaling 3,181 m^2, and two (2) open spaces totaling 5,247 m^2 are proposed within the development.

- The development will be accessed from Tessa Boulevard and Spruce Gardens. A 6.0m paved emergency access from Street 'A' to Haig Road will be provided through an upgrade and extension of the existing maintenance route around the Mercedes Meadows SWM Facility.

- The development will be serviced by a municipal water system (new 200mm diameter PVC watermain) within the Municipal right-of-ways.

- The development will be serviced by a gravity sanitary collection system directing effluent to the existing sanitary sewer within Mercedes Meadows residential subdivision and ultimately the City's treatment facility.

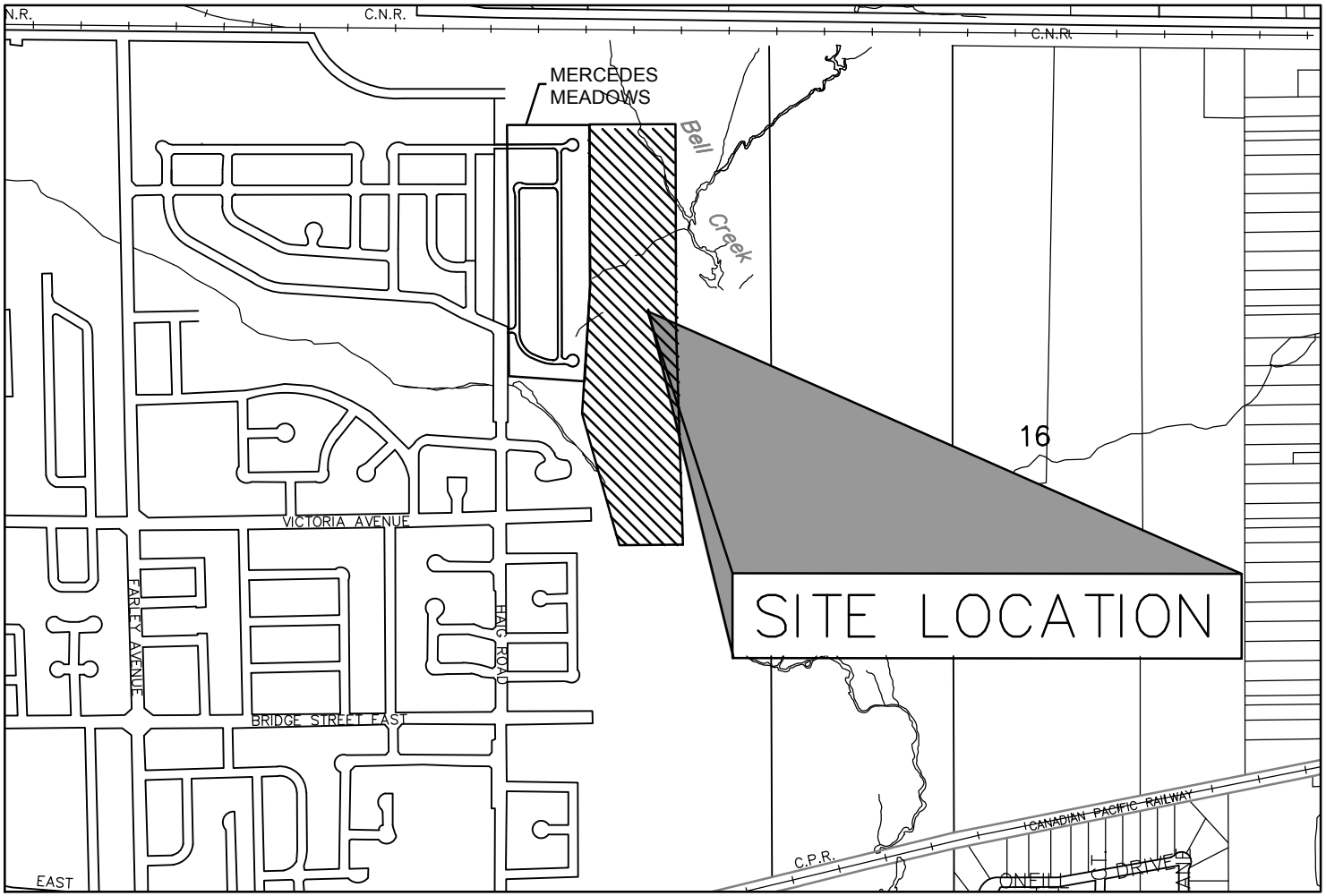
- Natural gas, electrical, telephone and cable utilities will be designed in accordance with the distributor's specifications and incorporated into the subdivision detail design.

We trust the above information meets your needs at this time and should you have any further questions or concerns, please do not hesitate to contact our office.

Sincerely,
AINLEY GRAHAM & ASSOCIATES LIMITED

Victoria Chapman, EIT
Engineering Intern

Adam Wilson, P. Eng.
Senior Engineer



HANLEY PARK NORTH
CITY OF BELLEVILLE

FIGURE 1
KEY MAP

Ainley CONSULTING ENGINEERS PLANNERS

FIGURE 2

HANLEY PARK NORTH DEVELOPMENT