

April 30, 2021
Sunset Lakes Development Corporation
1705 Old Prescott Road
Greely, ON
K4P 1M8

Project Number: P2089

Attention: Dan Anderson

Subject: Emerald Subdivision – Watershed Divide Analysis

This memorandum has been prepared to determine an accurate watershed divide for the subject area, located in and about 6544 Jack Pine Crescent in Greely, ON.

Background Information

The subject site spans two conservation authority jurisdictions, the Rideau Valley Conservation Authority (RVCA) and South Nation Conservation (SNC). The RVCA is responsible for commenting on development and administering regulations under the Conservation Authorities Act on lands within the Rideau River watershed, whereas South Nation Conservation undertakes the same in the South Nation River watershed. As such, the defined boundary is significant with regards to future development of the subject site. In a review of both RVCA and SNC's mapping data, it was observed that both conservation authorities have different dividing boundaries shown within the subject site. As such, J.F. Sabourin and Associates Inc. was retained to determine an accurate watershed divide for the subject site.

Procedure

A cursory check of watercourses in the area was completed, and identified the following watercourses as potential outlets:

- Grey's Creek Municipal Drain: Tributary to South Nation River watershed
- Spratt Drain: Tributary to Mosquito Creek and Rideau River watershed

The Grey's Creek Municipal Drain has two inlet channels, one in the northwest corner of the site which connects to the roadside ditches on Green Links Way, and another along the southern edge of the site which borders the rear lots of Waddion Drive before outletting in the southwest corner of the site. The Spratt Drain receives drainage from lands adjacent to Emerald Links Golf & Country Club and is located to the northeast of the site. Both municipal drains are displayed on **Figure 1**, which includes imagery from GeoOttawa.

Using the City of Ottawa's latest available LiDAR mapping (1m DEM, 2015), the drainage area to each receiver (municipal drain) was determined by the application of watershed delineation tools using QGIS software. The LiDAR tiles for the site and surrounding area were stitched together into a single raster file which was used to determine the drainage directions, flow paths and associated drainage areas. GIS software uses a raster-based approach to calculating drainage areas, where each cell is assigned an elevation and flow paths are calculated by finding the lowest elevation cell adjacent to the original cell. The drainage areas were then verified manually and simplified using contour mapping.

The results of the analysis produced the following drainage areas shown in **Table 1**. The drainage areas are visually displayed on **Figure 2**.

Table 1: Drainage Area Summary

Name	Drainage Area (ha)	Governing Conservation Authority
Grey's Creek Municipal Drain (North)	38.43	SNC
Grey's Creek Municipal Drain (South)	8.82	SNC
Spratt Drain	0.53	RVCA

Conclusion

This memorandum is to serve as a reference document for determining which portions of the subject site are under the jurisdiction of the RVCA and SNC and should be referenced when future development of the site is considered.

Yours truly,
J.F Sabourin and Associates Inc.



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Figures

- Figure 1: Location of Significant Municipal Drains
- Figure 2: Drainage Areas



Legend

- Property of Interest
- Drainage Areas
- Flow Direction
- External Area

External area as per ARK Engineering on-site survey.

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SCALE : 1:4000
 0 50 100 150 200 m

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TITLE :
 Figure 2: Drainage Areas

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