

TO: The Town of Niagara-on-the-Lake June 16, 2021

CC: SORE Association

FROM: Catherine A. Lyons **FILE NO:** 181547

SUBJECT: 200 John Street East and 588 Charlotte Street
Files OPA-02-2020, ZBA-11-2020 & 26T-18-20-01

We are solicitors for Save Our Rand Estate Association (“**SORE**”). SORE has retained a number of experts to provide SORE with advice regarding the reports submitted on behalf of Solmar Development Corp. (“**Solmar**”) in support of the above noted applications. Enclosed is a memorandum from WSP setting out preliminary comments on the Functional Servicing Report dated July 2020 and prepared by Schaeffers Consulting Engineers (the “**FSR**”). WSP will be conducting a full peer review of the FSR. The attached memo provides preliminary comments/concerns on the impact of the proposed grading and servicing on the community.

WSP has advised that “there is a significant proposed increase in elevation within the proposed development (2m) over existing conditions across the majority of the site”. We note the FSR indicates that in certain areas the elevation will be increased by 3 metres. Such extensive regrading could have major impacts to the significant cultural heritage resources including trees and plantings. WSP advises that the FSR shows that regrading will have to take place on adjacent properties and that the proposed site grades will create privacy issues for neighbouring properties.

WSP has also observed that the FSR does not illustrate how the 1-Mile Creek will be protected during construction of the culvert and watermain. In fact, gaps in the silt fence are proposed to accommodate the outlets from the sediment ponds. Further details are required to ensure that sediment-laden construction run-off is not improperly discharged. At the public Open House on June 16, 2021, a number of residents raised concerns regarding the location of a large temporary sediment pond immediately behind the homes on Weatherstone Court. It appears that tree removals will be required in order to place that pond at the proposed location. As a principle, trees should not be removed to accommodate temporary construction measures. We ask that the entire sediment control plan be carefully reviewed.

WSP has identified other issues in the attached memorandum. We ask that the Town investigate the issues identified in the attached memorandum as part of its review of the above noted applications.

Attachment

MEMO

TO: SORE Associates, Attention: Catherine Lyons
FROM: WSP Canada Inc.
SUBJECT: 18M-01769-00 – Randwood Estates Development Preliminary Review
DATE: May 19, 2021

WSP Canada Inc. was retained by Save Our Randwood Estates (SORE) to assist in reviewing the proposed development application for a residential subdivision to be located at 200 John Street East, as well as 588 Charlotte Street in the Town of Niagara-on-the-Lake as it relates to grading and servicing impacts to the community.

The development proposal includes a mixture of single and semi-detached units for a total of 191 units and a population of 483. The site has a single access to John Street through a proposed municipal right-of-way between 176 and 210 John Street and an emergency access/servicing corridor to Charlotte Street adjacent to the Heritage Trail.



Figure 1: Proposed Development

WSP has reviewed the Functional Servicing Report (FSR) by Schaeffers Consulting Engineers dated July 2020 and offers the following preliminary comments:

SANITARY SERVICING

The development including the proposed hotel at 144/176 John Street would generate a peak flow of 12.71 L/s and is proposed to connect to the existing 200mm diameter sanitary sewer on Charlotte Street that has a full flow capacity of 18.74 L/s. The FSR indicates that “Correspondence currently is in the works to obtain the town sanitary sewer model and identify the extent of necessary sewer upgrades in order to support the proposed development”. A downstream sanitary analysis is required to understand the implications of the additional flow on the Town’s existing sanitary sewer system, and required construction works within existing roads in the neighbourhood. This analysis should include all current development applications, including the hotel site at 144 and 176 John Street.

The sanitary connection for the development is proposed through a 6.0m wide emergency access route to Charlotte Street adjacent to the Heritage Trail. The sewer is shown approximately 0.85m from the property line with the adjacent residential properties to the north. Given the sewer excavation would be a minimum 3.0m deep, the excavation for the sanitary sewer could impact adjacent properties, mature trees and fences as well as the existing gated entrance to this driveway that we understand has heritage value.

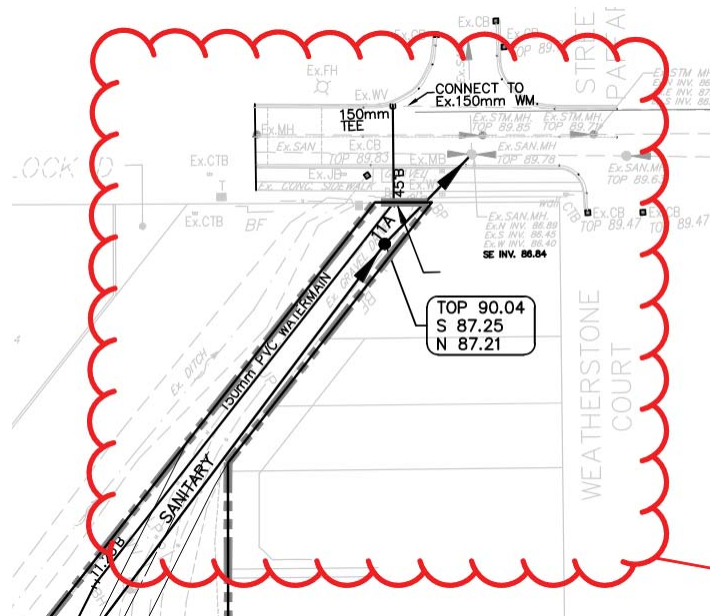


Figure 2: Water and Sanitary Servicing Connection to Charlotte Street



Figure 3: Existing Access to Charlotte Street

Through future detailed drawings, we would expect to see cross sections to confirm adequate spacing between watermain and sanitary sewer, and that the excavation during construction or for future maintenance will not encroach onto adjacent properties. Clay or bentonite trench plugs may also be required if the groundwater is high, to prevent conveyance of groundwater along the servicing trenches to the Town’s right-of-way.

WATER SERVICING

The development is proposing connections to the existing 200mm watermain on John Street and the 150mm watermain on Charlotte Street. A Fire Flow Analysis is included in the report indicating that in the Maximum Day Demand + Fire Flow scenario for the development, adequate flow is available at 20psi for fire protection. The existing static pressure in the Town’s water system is noted as 50psi, which is considered at the lower end of acceptable static pressure requirements. The FSR indicates acknowledges that the available fire flow in the area can range from 100 L/s to 150 L/s and recommends a monitoring device be installed on a hydrant in the vicinity to the development to determine the available daily minimum and maximum servicing conditions over a 1 week time period. Schaeffers is also in the process of obtaining the Town’s water supply model to identify any requirements for water system upgrades. This analysis should include all current development applications, including the hotel site at 144 and 176 John Street.

Similarly to the Sanitary section above, the secondary watermain connection for the development is to Charlotte Street through a narrow access. Construction of this watermain connection could impact the adjacent Heritage Trail and the existing gated access. Further details are required to understand the extent of the impacts.

The watermain connection to John Street crosses beneath the proposed culvert. Construction of these works will impact the existing creek. Further details are required to illustrate the protection and maintenance of flow within the creek, through by-pass pumping or other measures to prevent any upstream flooding or transport of sediment that may affect adjacent properties.

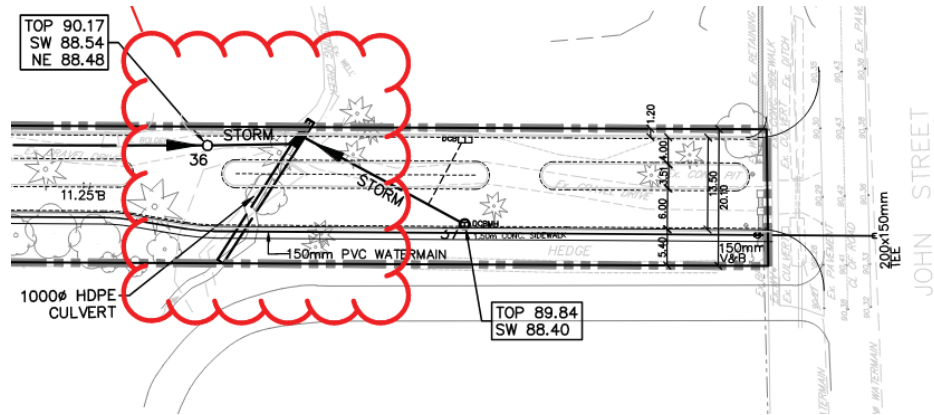


Figure 4: Watermain connection to John Street

STORM SERVICING

The majority of the site is proposed to be controlled through an open-bottom chamber system for both stormwater detention and quality treatment. Two areas, being the access roads to John Street and Charlotte Street will be untreated and uncontrolled. The FSR indicates the uncontrolled flow to Charlotte Street will be increased over existing conditions, however the increase is negligible. An analysis of the existing storm sewer system would be required to confirm adequate capacity in the Town's existing storm sewer system similarly to the sanitary and watermain modeling analysis. At the John Street access, the drainage area is untreated and uncontrolled. Given the 1-mile Creek floodplain appears to be constrained at this culvert in existing conditions based on NPCA Floodplain mapping, a hydraulic analysis of the creek including the proposed upgraded culvert would be required to confirm the proposed design does not cause adverse affects on the floodline. The impacts downstream by upgrading the culvert will need to be reviewed and addressed. Without quality controls on the storm outlet to 1-mile creek, hydrocarbons and sediment from vehicles can be discharged directly to the creek.

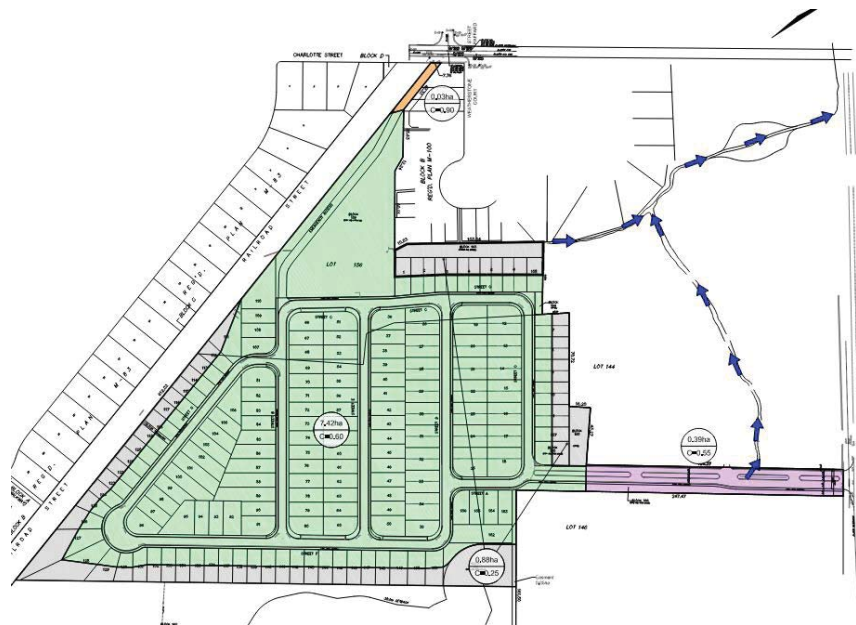


Figure 5: Proposed Storm Drainage Strategy

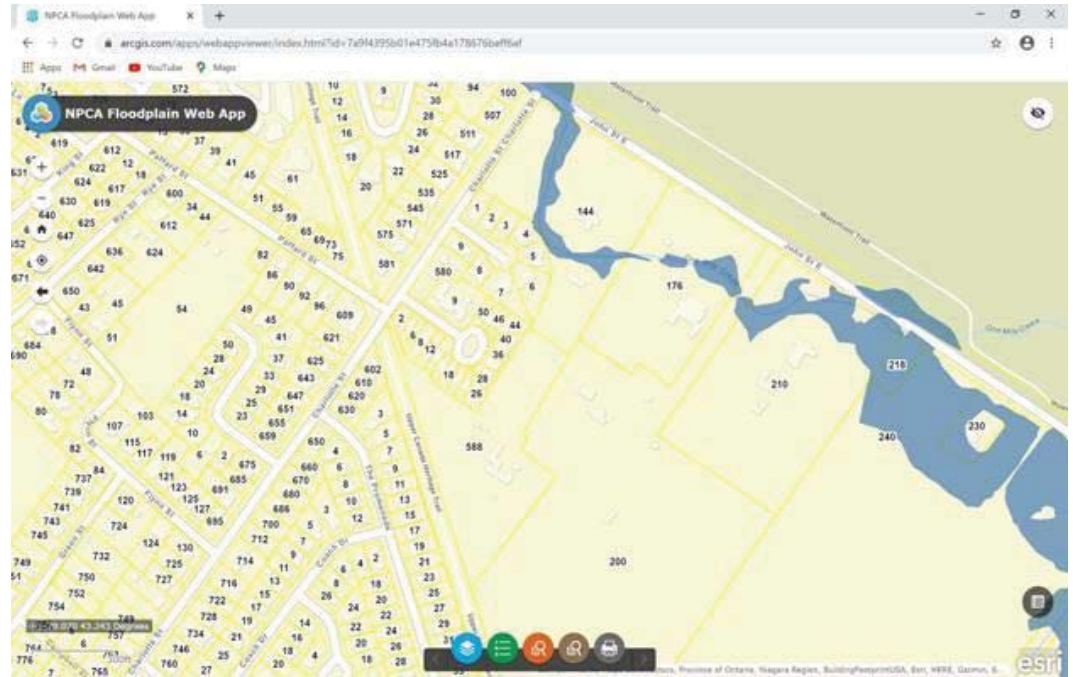


Figure 6: NPCA Floodplain Mapping

The stormwater storage tank system is described as an ADS storage chamber system which is an open bottom HDPE arch chamber system. The FSR indicates that due to the high groundwater in the vicinity of the proposed park, infiltration is not possible and an impermeable liner would be required on the system to prevent interaction with the groundwater. The Hydrogeological Investigation by Cole Engineering dated June 2020 has not yet been reviewed. Confirmation of the seasonally high groundwater elevation is required to understand the viability of the proposed storm detention system, as buoyancy can cause these systems to fail, and whether this would translate to adverse affects to adjacent properties. The proposed landscaping over the units should also be reviewed when available. The FSR indicates an isolator row in the storage system will be used to provide quality treatment. Over time, this row will need to be monitored and cleaned out, meaning excavated and replaced. Alternatively, an oil-grit separator could be used upstream of the storage chambers. Similarly, the storage chambers will ultimately need to be replaced over time. Alternative storage measures should be explored to minimize community disruption during maintenance and replacement.



Figure 7: Example Open-Bottom Arch Chamber System

GRADING

The Grading Plans provided in the Functional Servicing Report indicate grading onto adjacent properties. The property line elevations in some cases are higher than the existing grade therefore 3:1 slope down onto adjacent properties is required to tie into the existing grade. At the John Street access, the proposed culvert would need to be extended from the current design to reflect the bottom of slope. Alternatively retaining walls could be used to avoid the grading encroachment, however this is not indicated on the plans and there is inadequate space available along the west property line to construct the retaining wall.

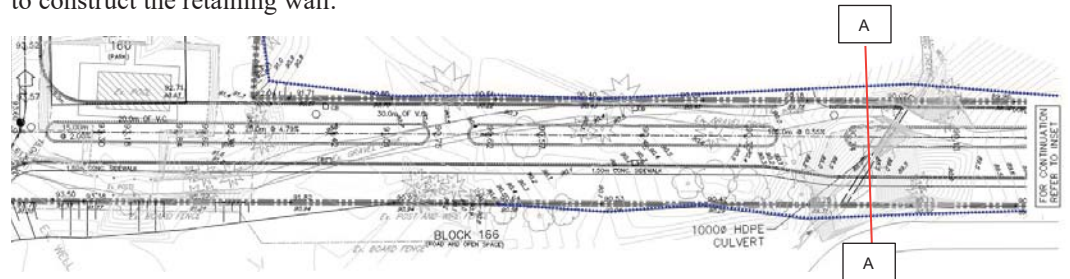


Figure 8: Grading On Adjacent Properties

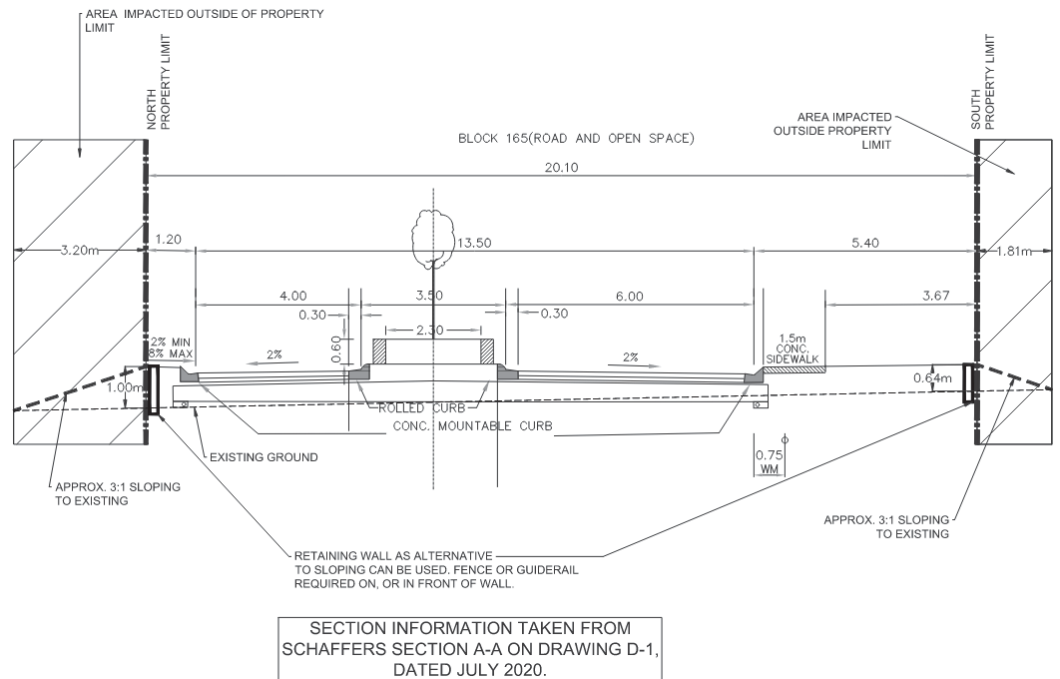


Figure 9: Cross Section Sketch to illustrate impacts

The Charlotte Street access is noted as an emergency access only. Typically, municipalities require a minimum 6.0m wide access road for emergency vehicles. Adjacent to Charlotte Street this access is just 6.0m wide therefore adjacent properties will be impacted by the construction of this roadway to accommodate any grading modifications. Given the narrow access, any accumulated snow would need to be removed and not pushed to the side of the road per typical snow-removal practice to allow for the full 6.0m access to remain clear.

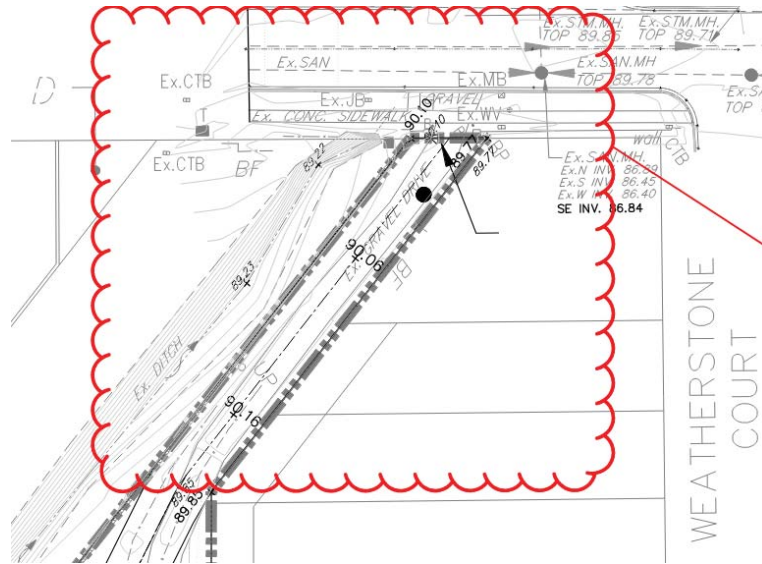


Figure 9: Grading At Access to Charlotte Street

It is recommended that alternative accesses for emergency access and servicing be explored, if it has not in previous studies.

There is a significant proposed increase in elevation within the proposed development (2m) over existing conditions across the majority of the site and we understand this is required to provide gravity storm and sanitary drainage to the outlets. While the Environmental Impact Statement and Tree Preservation Plan have not yet been reviewed, we note that trees along the property lines with adjacent properties would be impacted by the road and servicing construction. A further review of these studies and how the engineering design accommodates the existing trees is recommended. The 2m grade raise will also cause privacy issues for adjoining properties.

EROSION AND SEDIMENT CONTROL

The Erosion and Sediment Control drawings provided in the Functional Servicing Report do not illustrate how 1-Mile Creek will be protected during construction of the culvert and watermain. Gaps in the silt fence are proposed to accommodate the outlets from the sediment ponds. Further details are required to illustrate that sediment-laden construction runoff does not discharge off-site.

Should you have any questions on the above review, please contact the undersigned at 289-678-0310.

Tara Chisholm, P.Eng
Senior Project Manager