

March 8, 2022

Our File: 2018-4696

Town of Niagara on the Lake
1593 Four Mile Creek Road
PO Box 100, Virgil ON
L0S 1T0



SCHAEFFERS
CONSULTING ENGINEERS

Attention: Mark Iamarino, MCIP, RPP
Senior Planner

6 Ronrose Drive, Vaughan, Ontario L4K 4R3
Tel: (905) 738-6100 Fax: (905) 738-6875
Tor. Line: (416) 213-5590 E-mail: general@schaeffers.com

Dear Mr. Iamarino,

**Re: Response to comments of Goodmans LLP & WSP
200 John Street East and 588 Charlotte Street
Files OPA-02-2020, ZBA-11-2020 & 26T-18-20-01**

This letter is in response to the comments made by Goodmans LLP as per memorandum dated June 16, 2021 and WSP in their memorandum dated May 19, 2021 after doing a peer review of the Functional Servicing Report by Schaeffers dated July 2020.

The comment by **Goodmans LLP** is presented in italics and then followed by our response in normal font, as follows:

1. *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 meters. Such extensive regrading could have major impacts to the significant cultural heritage resources including trees and plantings.*

Current design does not require excessive fill. Weeping tiles for all residential units will be equipped with sump pumps to avoid raising the roads grades. Sanitary sewers will be installed at the standard depth connected to the pumping station which will also help lowering the site elevations.

2. *WSP advises that the FSR shows the regrading will have to take place on adjacent properties and that the proposed site grades will create privacy issues for neighbouring properties.*

Refer to the response above.

3. *WSP has also observed that the FSR does not illustrate how the 1-Mile Creek will be protected during the 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.

A separate drawing SC-1A is prepared to demonstrate how removal of the existing culvert, installation of the new culvert, watermain and retaining walls will be conducted including additional erosion control measures and pumping arrangements.

- 4. It appears that tree removals will be required in order to place a large temporary sediment pond at the proposed location. As a principle, trees should not be removed to accommodate temporary construction measures.*

Temporary sediment pond is moved away from the existing trees. Some of the trees will be removed to allow for the permanent pond and outfall construction.

The comment by **WSP** is presented in italics and then followed by our response in normal font, as follows:

Sanitary Servicing

- 1. 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 the existing roads in the neighbourhood. This analysis should include all current development applications, including the hotel site at 144 and 176 John Street.*

The town’s sanitary servicing model for the site has been obtained from the town and has been utilized in order to assess the impact of the proposed sanitary servicing system’s connection to the existing John Street Sewer at Charlotte Street. The findings of this model have been provided in the Sanitary Analysis report provided in Appendix B of the revised FSR.

- 2. 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.

Deep excavation at the emergency access from Charlotte Street is no longer required. 200mm watermain and 100mm sanitary forcemain will be installed with the standard 1.7m depth sufficient for frost protection. Cross-section demonstrating existing and proposed conditions is provided for clarifications.

- 3. Through future detailed drawings, we would expect to see cross sections to confirm adequate spacing between watermain and sanitary sewer, and that 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.*

Please refer to the response above.

Water Servicing

- 4. 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 and acknowledges that the available fire flow in the area can range from 100L/s to 150L/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 application, including the hotel site at 144 and 176 John Street.*

A water supply analysis was provided in WaterCAD. The provided analyses used hydrant test results along John Street as boundary conditions. The provided model shows that the proposed pipes sized within the site are expected to be sufficient to service the site based on existing boundary conditions along John and Charlotte Street. Details are provided in Section 3.0 of the FSR.

5. *Similarly to the Sanitary section, 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.*

Cross-section at the critical area is provided with this submission.

6. *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.*
7. A separate drawing SC-1A is prepared to demonstrate how removal of the existing culvert, installation of the new culvert, watermain and retaining walls will be conducted including additional erosion control measures and pumping arrangements.

Storm Servicing

8. *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.*

Noted. The newly proposed development plan includes a SWM pond in place of the previously proposed underground system. This pond will provide quantity and quality controls to the site.

With respect to the uncontrolled flows to Charlotte Street, further estimation of the expected post-development flows indicates that the flows from the site will be less than the existing flows to Charlotte Street. As such the downstream sewer system are expected to be unimpacted. This is discussed in Section 4.4 of the FSR.

9. *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 effects on the floodline.

An analysis for the sizing of the proposed culvert cross has been provided as per Section 4.5 of the FSR, and a memo has been provided in Appendix D of the report outlining the associated analysis. The proposed culvert sizing is expected to be sufficient to avoid any impact on the existing flood plain.

- 10. 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.*

The proposed entranceway proposes to keep implemented SWM infrastructure to a minimal by providing roadside drainage via roadside swales. Roadside swales will act as an immediate filter strip for minor runoff during smaller, and more frequent storm events. The implementation of these swales will therefore provide an initial layer of quality protection as flows are conveyed through the proposed grassed swales prior to discharging to One Mile Creek. Furthermore, these swales are not proposed to be lined, and will therefore allow for water to infiltrate as the ground becomes saturated.

- 11. 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 effects to adjacent properties.*

Noted. The proposed development no includes a SWM Pond facility in place of the proposed underground storage.

- 12. The proposed landscaping over the units should also be reviewed when available.*

No longer relevant as the design has been changed. See response to comment #10.

Landscaping will be provided within the proposed SWM block in line with all applicable landscaping requirements of a SWM Pond facility.

13. *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.*

Quality controls within the controlled site area will be provided by an appropriately sized permanent pool, to be provided within the newly proposed SWM pond facility. This permanent pool has been sized to provide 80% TSS removal, which is in excess of the required 70% TSS removal.

Grading

14. *The Grading Plans provided in the Functional Servicing Report indicate grading onto adjacent properties. The property line elevation 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.*

Grading onto the adjacent properties is not required. Some grading encroachment will be required onto the Greenbelt Block and future Hotel Site owned by the applicant.

15. *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.*

Retaining walls will be required at the culvert crossing. The walls and the cross-sections are shown on the relevant drawings.

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

Alternative emergency access is not warranted as snow clearing operations can remove and/or stockpile snow in open space areas not affecting abutting residents or heritage features.

- 17. 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 Environment Impact Statement and Tree Preservation Plan have not yet been received, we note the trees along the property lines with adjacent properties would be impacted by the road and servicing constructions. 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.*

The plan has been extensively revised and the associated grading has been designed so that the existing grades affecting all features protected in-place will not be altered.

Erosion and Sediment Control

- 18. There 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 is not discharged off-site.*

A separate drawing SC-1A is prepared to demonstrate how removal of the existing culvert, Installation of the new culvert, watermain and retaining walls will be conducted including additional erosion control measures and pumping arrangements.

Yours truly,
SCHAEFFER & ASSOCIATES LTD.

F. Tchourkine

Fedor Tchourkine, P. Eng.
Associate

**200 John Street East & 588 Charlotte Street
Natural Heritage Comment-Response Matrix**

Comment	GEI Response
Niagara Region Comments (June 2, 2021)	
<p>Regional Environmental staff are satisfied that the wooded area located along the west property line was sufficiently assessed and staff support the conclusion that it does not meet Regional significant woodland criteria. That said, staff encourage the applicant to consider opportunities to maintain as much of the treed area as possible.</p>	<p>Comment noted.</p>
<p>The EIS confirms that the woodland along the eastern property line and partially within the Greenbelt Plan Area meets Regional criteria as a Significant Woodland as it partially overlaps with a wetland. As such, the portion of the woodland located outside of the Greenbelt Area is considered an Environmental Conservation Area (ECA), and the portion of the woodland within the Greenbelt Plan area is considered an Environmental Protection Area (EPA). The portion of the woodland within the Greenbelt Plan Area is also considered a Key Natural Heritage Feature in the Greenbelt Plan.</p> <p>The EIS indicates that a 30 m Vegetation Protection Zone (VPZ) will be applied to the woodland within the Greenbelt Plan Area, which will be restored through the completion of an overall restoration plan for the subject lands. Staff offer no objection to the proposed VPZ and associated restoration.</p> <p>The Significant Woodland outside of the Greenbelt Area is proposed for removal to accommodate the development. The EIS characterizes this portion of the woodland as not providing any significant ecological function, and proposes to implement a woodland restoration program within and adjacent to the residual portions of the woodland within the Greenbelt Plan Area. Given the characterization of the woodland and wetland features (wetland</p>	<p>Please note that the treed area along the eastern property was assessed by Regional Forestry Staff in August and September 2021. GEI understands that, through this assessment, the Region confirmed that this treed area did not have sufficient stem density to meet the definition of what constitutes a woodland (as per the <i>Forestry Act</i> definition). Therefore, the feature is not considered to be a woodland and therefore cannot be a significant woodland. Only the wetland is considered to be a component of the natural heritage system, since it is a Key Natural Heritage Feature in the Greenbelt Plan. As discussed in the responses to NPCA comments in this table, the wetland is proposed for removal and off-site compensation.</p> <p>Therefore, once the wetland is removed, there will be no Environmental Conservation Areas or Environmental Protection Areas associated with the currently treed area on the eastern property boundary.</p> <p>As a result, the Draft Plan of Subdivision has been revised since there are no constraints to development in this area (based on the proposed wetland removal and off-site compensation obtaining approval from NPCA).</p>

Comment	GEI Response
<p>discussed below) proposed for relocation, Regional staff are satisfied that the removals can be mitigated through a comprehensive restoration plan that confirms the features on site will be maintained and enhanced. The formal restoration plan can be considered as a condition of approval; however, the Region requires basic details such as compensation ratios, confirmation that there is appropriate land area available for the required restoration works and identification of supporting conditions such as the requirement of a monitoring plan. The Region will also require the identification of safeguards that can be implemented to ensure that the natural features both created and maintained are protected over the long term. It is also noted that any potential woodland removals that overlap unevaluated wetlands will be dependent on NPCA approval.</p>	<p>Since no significant woodland removal is proposed, no woodland restoration measures are required (as had been committed to in the July 2020 EIS).</p>
<p>A small unevaluated wetland community approximately 0.23 ha in area was identified on the subject lands, straddling the dividing boundary between the urban area and Greenbelt Plan Area. As such, the portion of the wetland within the Greenbelt Plan area is considered a KNHF/KHF. It is noted that the portion of the wetland outside the Greenbelt Plan Area has not been designated as a significant natural feature in the Regional Official Plan (ROP). The EIS proposes removal of the wetland located outside the Greenbelt Plan Area to accommodate development, however, Regional staff defer to the NPCA as it relates to relocation/compensation requests associated with wetland communities. The Region request that NPCA correspondence be appended to an updated EIS before staff are able to comment on this aspect of the development proposal.</p>	<p>As per the above response, the entire wetland is now proposed for removal and off-site compensation to address NPCA comments.</p>
<p>Two watercourses, One Mile Creek and the lower reach of the One Mile Creek Tributary, were confirmed in the EIS to provide indirect Fish Habitat. The EIS recommends a 10 m buffer from the edge of the bankfull channel of the Tributary of One Mile Creek, which staff confirm is sufficient. However, the EIS indicates that riparian vegetation associated with One Mile Creek will be removed to facilitate widening the road, as well as additional impacts to the</p>	<p>Additional detail on riparian vegetation adjacent to the proposed One Mile Creek crossing along the entrance road from John Street is provided in the EIS Addendum.</p>

Comment	GEI Response
<p>natural channel bottom. Staff request additional details as it relates to impacts to the riparian buffer in this area, including consideration of restoration opportunities.</p>	
<p>The Region has reviewed correspondence from Ministry of Natural Resources and Forestry staff that suggests Provincially endangered and threatened species have been identified as potentially present adjacent to the driveway extending off of John Street.</p> <p>These species have not been addressed in the EIS work submitted in support of the applications. As such, staff request that an additional botanical survey be conducted to screen all lands within 30 m of the driveway</p>	<p>The adjacent property (176 John Street) consists nearly entirely of manicured lawn and residential trees; therefore, the only potential species at risk present are trees. An arborist inventory had previously been prepared for that property. This inventory was reviewed to identify tree species present in the area.</p> <p>Although species at risk vegetation species are known to be present on the adjacent property (176 John Street), albeit all are considered to be planted, none are located within 30 m of the proposed entrance driveway from John Street.</p> <p>The updated Arborist inventory (Buchanan and Stantec 2021) for the 200 John Street property did identify two Kentucky Coffee-Trees on the adjacent property to the south (210 John Street). These trees are not expected to be impacted by driveway construction on the Subject Lands, as discussed further in the EIS Addendum.</p>
<p>An ecological linkage/corridor was identified within the Greenbelt Plan Area. However, as no development is proposed within this portion of the subject lands, no negative impacts are anticipated. As such, staff have no concerns.</p>	<p>Comment noted.</p>
<p>Niagara Peninsula Conservation Authority Comments (August 4, 2021)</p>	
<p><u>Watercourses</u> Based on the characterization of the Tributary of One Mile Creek NPCA staff confirm that this watercourse satisfies the criteria of the definition of a watercourse provided in the Conservation Authorities Act and is therefore regulated by the NPCA.</p>	<p>Comment noted.</p>
<p>NPCA staff are satisfied that the proposed buffers to the watercourse are appropriate for the maintenance of its form and function.</p>	<p>Comment noted.</p>

Comment	GEI Response
<p>A Buffer Planting Plan/Landscape Plan for the tributary of One Mile Creek is requested at the detailed design stage for review and comment by NPCA staff</p>	<p>Comment noted. As committed to in the July 2020 EIS, a buffer planting plan/landscape plan will be prepared for the buffer area with ecological enhancement opportunities identified to improve the form and function of vegetation adjacent to the feature.</p>
<p>The Erosion and Sediment Control Plan indicates that a temporary sediment pond will be located within the 10 m buffer of the tributary of One Mile Creek. NPCA staff are willing to consider a temporary buffer reduction of 5 m to facilitate the construction of the sediment pond provided the area is restored following the decommissioning of the sediment pond. NPCA staff note that the sediment pond and all associated grading/access routes must be located a minimum 5 m from the watercourse per NPCA Policy 9.2.5.2.</p>	<p>As per the updated Erosion and Sediment Control Plan (Schaeffers 2021), the temporary sediment pond has been fully removed from within the 10 m buffer (with the exception of discharge, which must tie into the creek).</p>
<p>As no grading is proposed (other than to facilitate the construction of the sediment pond) within the 10 m buffer of the tributary of One Mile Creek NPCA staff will request that limit of work fencing be established along the 10 m buffer to prevent negative impact to the watercourse and its buffer during the construction process.</p>	<p>Comment noted. This has been addressed on the updated Erosion and Sediment Control Plan drawing (Schaeffers 2022).</p>
<p><u>Wetlands</u> Section 5.1.5.3 of the EIS indicates that several small meadow marsh (MAM2) communities are present on the property, however these communities are not discussed elsewhere in the report nor identified on the applicable drawings. NPCA staff request further information be provided for these unevaluated wetlands including feature characterization, size and location. Pending further information on these wetlands NPCA staff may have additional comment.</p>	<p>These small MAM2 communities were originally identified during the preliminary Ecological Land Classification assessment in early summer 2018 adjacent to and contiguous with the existing SWD3-2 wetland. This area had been recently disturbed by work on the property completed in 2017 and was in an early state of natural regeneration. At the time of the survey, sufficient wetland indicator species were present to identify the areas as MAM2 communities.</p> <p>However, through the October and November 2018 botanical investigations, these two areas were found to no longer have sufficient vegetation species to be considered wetlands and were removed from ELC mapping (they were considered to be part of the overall CUM1-1/Disturbed area occupying the central portion of the Subject Lands, as depicted on Figure 5 in the July 2020 EIS). The absence of these wetlands was confirmed during the site visit with NPCA in September 2021 when the SWD wetland was staked.</p>

Comment	GEI Response
	<p>However, reference to these MAM2 wetland communities was inadvertently not removed from the July 2020 EIS report and they continued to be referred to in the Significant Wildlife Habitat assessment section (5.1.5.3) and Table 12 (SWH Assessment). These communities are not present on the Subject Lands.</p>
<p>The EIS has identified a silver maple mineral deciduous swamp (SWD3-2) within the study area. NPCA staff note that this is considered a regulated feature and are not in agreement with the conclusions of the EIS that the wetland does not meet all criteria of the Conservation Authorities Act definition. NPCA staff note that a groundwater connection is assumed to be present for this wetland and that NPCA staff are not satisfied that conclusive evidence has been provide to demonstrate that no groundwater connection exists between the wetland and surface water features.</p>	<p>Comment noted. The SWD3-2 wetland will be considered as a regulated feature.</p>
<p>The EIS has identified that removal of a portion (0.10 ha) of the swamp community to facilitate the proposed subdivision design. In order for NPCA staff to consider this removal, all aspects of NPCA policy 8.2.2.8 Wetland Reconfiguration and Compensation for Non-Provincially Significant Wetlands must be met to the satisfaction of NPCA staff. Please note that NPCA staff require compensation to be like-for-like vegetation type (ie. Swamp for swamp, marsh for marsh) and of at least the same areal extent of the wetland proposed to be removed.</p> <p>a. NPCA staff agree with the conclusions of the EIS that an OWES evaluation is not necessary for this wetland based on the characterization of the feature provided by the EIS, the size of the feature and the distance to any previously evaluated wetlands.</p>	<p>Comment noted.</p>

Comment	GEI Response
<p>NPCA staff note that no buffer is currently proposed for the remnant swamp community as this community is identified as providing a buffer function to the significant woodlot within the Greenbelt NHS. NPCA staff are not supportive of the current approach, however, are willing to consider the following possible solutions, and welcome the proposal of additional solutions provided a net ecological benefit is demonstrated for the study area:</p> <ul style="list-style-type: none"> a. Retain the wetland feature in its entirety and afford the feature an appropriate buffer. Rationale for a buffer reduction has not been provided within the EIS to maintain the form and function of the wetland and NPCA staff would therefore consider 30 m an appropriate buffer. Any reduction to this buffer must demonstrate no negative impact to the ecological and hydrological function of the wetland to the satisfaction of NPCA staff. b. Reconfigure 0.10 ha of wetland as currently proposed and afford the feature an appropriate buffer which demonstrates that no negative impact to the remnant wetland will be incurred as a result of the proposed development as outlined in a. above. c. Reconfigure 0.10 ha of wetland as currently proposed and maintain the 0 metre buffer to the retained wetland. NPCA staff note that a 0 m buffer is not suitable for the maintenance of wetland hydrology and ecology and therefore assume that negative impacts will be incurred. Therefore, to consider a 0 m buffer NPCA staff require that the feature be compensated in its entirety in a location contiguous with the existing woodlot. 	<p>Solmar is proposing to remove the wetland in its entirety and construct a compensation wetland on property they own at 144 John Street. The conceptual wetland compensation plan is discussed in the EIS Addendum. A detailed compensation plan will be prepared during detailed design to support and application for a permit to remove the existing wetland.</p>
<p>NPCA staff note there is opportunity present on the property for habitat enhancements within the Greenbelt NHS. NPCA staff encourage the applicant to explore options for improving existing</p>	<p>Comment noted. In light of the Region's reassessment of the treed area as not meeting woodland stem density criteria and the proposed removal and off-site compensation for the wetland, there are no natural features requiring protection within the Greenbelt NHS.</p>

Comment	GEI Response
conditions through ecological restoration. NPCA staff recommend that the applicant work collaboratively with Regional staff and would welcome the opportunity to comment on any proposed enhancement works.	

200 John Street East & 588 Charlotte Street

Natural Heritage Peer Review - Natural Resource Solutions Inc. (July 8, 2021)

Comment-Response Matrix

NRSI Comment*	GEI Response
Recommendations under the Heading “Environmental Impact Study”	
<p>Comment on the extent of proposed grading onto adjacent properties and the potential impacts to natural environment features, including stormwater, drainage, and off-site or boundary trees</p>	<p>The only proposed off-site grading will be onto properties that are also owned by the project proponent, including the adjacent properties at 144 and 176 John Street. Grading onto adjacent properties (i.e., for the watermain installation and SWM pond outfall) is addressed in the EIS Addendum.</p> <p>Potential impacts to boundary trees not considered to be part of a significant natural heritage feature are addressed in the Arborist Report.</p>
<p>Provide a statement regarding the potential for a linkage corridor to exist between the Heritage Trail, Significant Woodland, and treed area along the boundary between 200 and 210 John Street to the parkland north of John Street, in addition to the linkage corridor identified along the significantly thinner hedgerow along the eastern property boundary</p>	<p>The EIS identifies a potential ecological linkage extending from the Paradise Grove Plain ANSI northeast of the Subject Lands to the woodland south of the Subject Lands. The linkage is identified within the Greenbelt Plan Natural Heritage System connecting these two features. It is our assumption that the Greenbelt Plan NHS was identified within this area specifically to link these two features.</p> <p>While we acknowledge that the border between 200 John Street (the Subject Lands) and 210 John Street appears has more tree cover relative to the southeastern boundary of 210 John Street and the adjacent Two Sisters Winery, our opinion is that this area would not provide any substantial linkage function under existing conditions. While no wildlife movement studies have been undertaken in this area, we find it mostly likely that if such movement is occurring, it would be large mammals such as White-tailed Deer and Coyote and possibly birds and bats moving between the two larger wooded areas. Regardless of the relatively low density of trees along the boundary of 210 John and Two Sisters Winery, this route between the two large woodlands appears to be the route that would be used by</p>

NRSI Comment*	GEI Response
	<p>wildlife as it is direct and there are no structural barriers that would prompt wildlife to use an alternative route.</p> <p>The property boundary between 200 John Street and 210 John Street being referred to in this comment is located approximately 190 m northwest of the northwestern corner of the woodland associated with the Paradise Grove Plains ANSI. Therefore, to use this area as a linkage, wildlife coming from the ANSI would need to move over this distance along John Street. We find it unlikely that wildlife moving from the ANSI would choose to move up John Street to the start of the hedgerow providing the tree cover being referred to in the comment given the existing residential uses along John Street; more likely, we expect wildlife would emerge from the ANSI woodland, cross John Street and move directly through the Two Sisters Winery property towards the southwestern woodland. This is the most direct route. The presence of relatively more trees along the 210 and 200 John Street property boundary is not expected to be a sufficient draw to wildlife, considering the distance and existing residential uses along this route, relative to the most direct route between the two features.</p>
<p>Re-evaluate the results of the “no negative impacts” test with respect to the Significant Woodland (including consideration for any additional linkage functions as mentioned above) and the proposed removal of Significant Woodland and approximately half of the existing wetland, by identifying the residual impacts and determining whether those residual impacts may act cumulatively;</p>	<p>As discussed within Section 2 of the EIS Addendum, the treed area within the Greenbelt and urban area on the Subject Lands was assessed by Region of Niagara forestry staff in August and September 2021. They determined that the treed area did not contain sufficient density of trees to meet the Region’s criteria to be a woodland. Therefore, as discussed in the EIS Addendum, the feature is no longer considered to be a woodland and therefore is not a Significant Woodland.</p> <p>However, the wetland remains a Key Natural Heritage Feature in the Greenbelt and an unevaluated wetland within the Urban Area. The wetland falls under the jurisdiction of NPCA. As per the NPCA comments on the EIS (dated August 4, 2021), NPCA provided options</p>

NRSI Comment*	GEI Response
	to address the presence of the wetland. Through further discussion with NPCA, Solmar is proposing to remove the wetland in its entirety and provide off-site compensation in accordance with NPCA policies. A conceptual wetland compensation plan is provided in the EIS Addendum. The detailed wetland compensation plan will be prepared during the detailed design process. A permit from NPCA would be required prior to receiving approval to remove the wetland.
Update the 2020 EIS and propose recommendations based on the foregoing, including presenting any required changes to the draft plan of subdivision, alternatives to avoid removal of and any impact to boundary, shared and offsite trees, on the presumption that no consent will be forthcoming from either the Town of Niagara-on-the-Lake or the owner of 210 John for any such impacts, and other mitigation measures to prevent adverse environmental impacts.	The EIS Addendum has been prepared to address comments from the Region of Niagara (dated June 2, 2021), NPCA (dated August 4, 2021) and NRSI, as well as other design changes made since the original submission.
Recommendations under the Heading “Bats and Bat Habitats”	
A number of buildings are found on the subject properties which are proposed for removal as part of the site development. These should each be evaluated by a qualified biologist experienced in identifying buildings with the potential to provide bat maternity habitat, as well as with experience in identifying bats and how to adequately survey for their presence;	Bat surveys will be required at each of the buildings on the Subject Lands to confirm that they are not providing maternity habitat for species at risk bats. If the results of these surveys indicate that no species at risk bats are present, buildings may be removed (subject to any other non-natural heritage related requirements). If species at risk bats are present, discussion with the Ministry of Environment, Conservation and Parks (MECP) will be required to confirm any permitting or mitigation requirements prior to building removal.
Little Brown Myotis and Northern Myotis were not identified in the course of background review carried out by the author or as provided by the MNRF, and were not discussed within the 2020 EIS aside from records obtained from acoustic recordings. However, the proponent should consider that available distribution data (e.g. Humphrey and Fotherby 2019), the high mobility of the species, and the difficulty in obtaining records of bat occurrence where sufficient information is available to make a positive identification combine to indicate that maternity habitat for Little Brown Myotis or Northern Myotis could occur in the area;	Noted. It is acknowledged that these species could occur within the area, and this was considered in the development of the field program.

NRSI Comment*	GEI Response
<p>While trees containing suitable cavities or peeling bark are preferred by Species at Risk bats such as Little Brown Myotis (<i>Myotis lucifugus</i>) and Northern Myotis (<i>Myotis septentrionalis</i>), Tri-colored Bats are not known to form maternity colonies in tree cavities or beneath peeling bark. Consider the definition of habitat for Tri-colored Bat as identified within the federal recovery strategy (ECCC 2018), which identifies naturally-occurring maternity habitat for the species within clumps of dead foliage and in arboreal lichens. Also consider the provincial recovery strategy for Tri-colored Bat, which adds further detail (Humphrey and Fotherby 2019): dead leaf clusters in the shape of an umbrella, whether formed by branch damage or disease or by Eastern Gray Squirrel (<i>Sciurus carolinensis</i>) when building nests of dead leaves and other materials, dense clusters of live foliage, and arboreal lichens or epiphytes;</p>	<p>See response to next point.</p>
<p>Surveys for maternity habitat for Tri-colored Bat should include assessments for dead leaf clusters, specifically carried out during the leaf-on period of the same year when acoustic monitoring is completed;</p>	<p>While no specific surveys of dead leaf clusters were completed during the bat habitat assessment, the presence of Tri-colored Bat was not confirmed during the acoustic surveys. Therefore, regardless of the presence/absence of habitat, the species is not present and therefore, the treed area is not considered to be habitat.</p>
<p>Discuss the significance of isolated trees containing cavities or exfoliated bark inventoried and identified in Figure 5, Appendix A, including whether they may provide habitat for SAR bats, when, and for what purpose;</p>	<p>Based on the acoustic monitoring results from the more densely treed areas on the Subject Lands, SAR bats appear to be present but the low numbers observed are more indicative of movement through the area as opposed to any maternal use. Therefore, while in general isolated trees containing cavities could potentially provide habitat for SAR bats, the results suggest that this use is not occurring on the Subject Lands. As a mitigation measure, tree removal (where required) is recommended to occur outside the bat maternal roosting window (April 1 to September 31).</p>
<p>Two different models of ultrasound acoustic detector are reported to have been used to conduct acoustic monitoring for assessing the presence of SAR bats in treed habitats (SM3BAT and SM4BAT). While these are both produced by the same manufacturer, Wildlife Acoustics Inc., in accordance with provincial guidance surveys should</p>	<p>We confirm that only SM4BAT detectors were used for the bat surveys on this project.</p>

NRSI Comment*	GEI Response
<p>be completed with a single detector model across the site for comparability; otherwise, the variation in detection range or efficiency should be quantified (MNRF 2017, MECP 2020);</p>	
<p>Three acoustic bat monitoring stations were deployed at three locations within the site. The Terms of Reference indicates that the acoustic monitoring methods employed were a combination of methods provided by MECP and the author's judgement. Correspondence indicating that MECP agreed with the approach employed, or that the MECP agreed with the results and/or interpretation, should be provided</p>	<p>The approach used is a standard approach that we have employed on numerous projects without comment from MNRF/MECP.</p>
<p>Consider that the presence of SAR bats identified through acoustic monitoring in the area (i.e. Little Brown Myotis and Eastern Small-footed Myotis) may indicate that habitat for the species is found within the Cultural Woodland or nearby</p>	<p>As noted in the EIS, based on the low abundance of species at risk bat calls, it remains our opinion that this is indicative of movement through the Subject Lands and not any maternal roosting use of the Subject Lands themselves.</p> <p>The presence of SAR bats in the area in June likely indicates that maternal roosting is occurring somewhere in the vicinity. The most likely locations include the larger off-site woodlands to the northeast (approximately 280 m from the treed area on the Subject Lands) and southwest (approximately 345 m from the treed area on the Subject Lands). The presence of potential off-site maternal habitat has no bearing on the Subject Lands.</p>
<p>Identify and analyze the potential crevice features on the site which may be used by Eastern Small-footed Myotis should therefore be undertaken given the species was documented through acoustic surveys</p>	<p>Suitable crevice features have not been identified to date. An assessment of anthropogenic structures on the Subject Lands will be completed at a later date.</p>
<p>Provide mitigation measures to minimize potential impacts to bats and confirm the approach with the Ministry of Environment, Conservation and Parks. Mitigation measures may include the installation of exclusion features on existing buildings suitable for use by bats, and appropriate habitat compensation.</p>	<p>As noted above, the implementation of a tree removal timing window will ensure there are no impacts on SAR bats or their habitat associated with tree removals; confirmation of approach is not required from MECP for this measure. Should it be determined that anthropogenic structures on the Subject Lands are providing habitat for SAR bats, additional mitigation measures will be implemented consistent with MECP best practices for avoiding impact to SAR bats</p>

NRSI Comment*	GEI Response
	and their habitat. In the instance that this is confirmed, additional consultation with MECP would be undertaken.
Recommendations under the Heading “Watercourses”	
Clarify the locations of the various watercourse reaches relative to property boundaries, etc:	<p>It is our understanding that much of the Tributary of One Mile Creek in the northern portion of the Subject Lands (reach H1-S4 on Figure 4 in the EIS) is located on the property boundary, as the property fence line runs through portions of the centre of this feature.</p> <p>Other HDFs shown outside the Subject Lands boundary on Figure 4 are also off the property boundary including those within the ditch along the Heritage Trail (i.e., HDF reaches H1-S1, H1-S2b, H1-S2a, H1A-S1).</p> <p>HDF reach H1-S3 is primarily located on the Subject Lands, although, as shown on Figure 4 in the EIS, the upstream end of this reach was identified as being adjacent to the Heritage Trail, off the Subject Lands.</p>
Provide justification for the late second headwater site visit, as vegetation growth in late May could be substantial enough to restrict adequate observation of the features	<p>While the second headwater drainage feature assessment survey was conducted late within the window identified in the “Evaluation, Classification and Management of Headwater Drainage Features Guidelines” (CVC and TRCA 2014), which specifies that the second-round survey should occur “late April – May” (Table 4), vegetation was not considered to be a factor that would prevent adequate observation.</p> <p>During the first-round survey in April, all potential headwater drainage features on the site were assessed during a high flow period in the spring when vegetation was not yet growing. All potential headwater drainage features on and adjacent to the Subject Lands (where public access was available) were identified during the first-round survey under appropriate conditions. Therefore, during the second-round survey, the location of all features was known and</p>

NRSI Comment*	GEI Response
	regardless of the presence of vegetation, all features were found and adequately assessed in accordance with the protocol.
Consider conducting a site visit during or shortly after a rain event sometime between May and September, as this is useful to understand how much water is conveyed by the features and for designing overland and surface flow for the development.	Such a site visit is not required to adequately characterize the drainage features on the Subject Lands for the purposes of the EIS and as such, this comment has been forwarded to the project engineer (Schaeffers) for comment. Schaeffers has noted that for the purposes of stormwater management planning, they typically model flows based on available information including establishing contributing drainage areas using site-specific topographic surveys, which has been done for this proposed development. Using this information, they have estimated and quantified pre-development flow conditions on the site using a site-specific hydrology model, which is typical practice on other developments. Therefore, an additional site walk is not expected to provide any additional data required to design an appropriate stormwater management system for the proposed development.
Complete the Appendix B Table 3 headwater analysis cells for reach H1-S2B: modifiers and riparian vegetation. If no information is available, then this should be stated;	<p>This information was inadvertently omitted from Table 3 as a result of a formatting issue.</p> <p>The hydrological modifier entry should be “Upstream agricultural operations and a pedestrian walking trail to the west have likely modified the hydrology of this feature” since these land uses would result in altered drainage towards this ditch along the Heritage Trail. Regardless, this modifier has not been used alter or modify the Hydrology classification in this part of the ditch.</p> <p>The riparian entry should be “scrubland”, which was the dominant vegetation form within the 0 to 1.5 m range on both sides of the reach. Lawn associated with the Subject Lands and the residences on the opposite of the Heritage Trail was the dominant vegetation form within the 1.5 to 30 m riparian zone on both sides of the reach. Regardless, given the Limited hydrology classification, the riparian</p>

NRSI Comment*	GEI Response
	classification does not change the overall management recommendation.
<p>Include a comparison of the HDF results to the NPCA watercourse typing and include a discussion of appropriate buffers;</p>	<p>As discussed in Section 4.4.2 of the EIS, we assessed reach H1-S4 of the Tributary of One Mile Creek as a Conservation HDF but noted that it would likely be considered a regulated watercourse by NPCA. The EIS proposed a 10 m buffer and NPCA agreed that this was an appropriate buffer (per their letter dated August 4, 2021).</p> <p>Upstream reaches of the tributary (e.g., H1-S3 and further reaches upstream off the property) were considered in the EIS to be headwater drainage features and not part of the regulated watercourse. This was based on their characterization, which identified them primarily as ditched features (i.e., the upstream ditches adjacent to the Heritage Trail and the H1-S3 ditch running through the previously residential manicured lawn of 588 Charlotte Street). Reach H1-S3 was proposed to be retained in place with a 5 m buffer through the park to continue to convey off-site drainage downstream.</p> <p>However, NPCA has confirmed that reach H1-S3 is considered to be part of the regulated watercourse. NPCA indicated that they are supportive of retaining this reach in place with a 5 m buffer. This is consistent with what is proposed in the EIS Addendum.</p>
<p>Include a discussion of proposed enhancement measures for the retained watercourse reaches:</p>	<p>As noted in Section 7.2 of the EIS, a vegetation restoration plan for the 10-m buffer from the regulated watercourse will be prepared during detailed design. The plan will consider opportunities to enhance buffer function relative to the narrow strip of trees. This will include consideration of ground cover and shrub planting opportunities to enhance the buffer.</p> <p>Reach H1-S3 will be retained in its current form as a ditch through the proposed park. A 5-m wide strip of unmanaged vegetation is recommended for this reach to provide separation from adjacent</p>

NRSI Comment*	GEI Response
	<p>parkland activities and provide buffer functions including additional regulation of overland flow towards the watercourse from the adjacent park and enhancement to riparian vegetation function relative to the existing manicured lawn that is present to the current ditch. Opportunities to enhance existing vegetation adjacent to the feature will be considered during detailed design.</p>
<p>Review of the NPCA regulated watercourse mapping. Include reference to the full extent of the regulated area and provide justification or discussion as to the impacts of the regulated area on the management recommendation for reach H1-S3;</p>	<p>See above response regarding reach H1-S3 and NPCA regulation.</p>
<p>Include an analysis of the ecological impacts of existing flooding as well as the impacts of the proposed regarding of the lands and associated changes in flow patterns entry points to the system.</p>	<p>It is not clear to us what how an analysis of the ecological impacts of existing flooding would enhance the EIS and/or proposed development plans.</p> <p>The proposed stormwater management plan will be meeting quality control criteria (minimum 70% TSS removal, as required by NPCA), quantity control (controlling post-development peak flows to match pre-development) and erosion control (with discharge thresholds provided by our fluvial geomorphologist). While the primary outlet for the SWM treatment train will be shifted to the downstream end of the Tributary of One Mile Creek reach H1-S4, this reach is only considered indirect fish habitat and no negative impacts on indirect fish habitat functions are expected as a result of this shift. Flow originating upstream (off-site) and overland flow from the proposed park and adjacent rear yards will continue to be directed to the watercourse to feed reach H1-S4 on an ephemeral basis, therefore it will not be starved of flow. Further this reach is highly degraded and artificially altered both on the Subject Lands and adjacent properties (e.g., due to presence of retaining walls in various states of disrepair, property fencing through the middle of the watercourse). Therefore, no ecological impacts are expected as a result of the proposed downstream shift in primary entry point of stormwater into the system.</p>

Notes

- The NRSI comments included within this table are those that fall under the headings of “Recommendations” within NRSI’s July 8, 2020 letter to avoid copying all NRSI’s text into this table. This comment-response table should be reviewed in conjunction with the full NRSI July 8, 2020 letter to ensure the context of the comment and response is understood.