Amos

**Environment + Planning**

September 27, 2017

Ms Sharon Lingertat, MCIP, RPP
Senior Planner, Environmental Assessment Planning
Toronto and Region Conservation Authority
101 Exchange Avenue, Concord, ON
L4K 5R6

Via email: SLingertat@trca.on.ca

Dear Ms Lingertat

**Re: Class Environmental Assessment Study (Phases 3-4)**
**Seaton City Roads in the City of Pickering**
**Response to Comments on the Draft ESR**

This letter is our response for your September 8, 2017 comments on the DRAFT Seaton Roads (Phases 3-4) Class EA Study (issued July 27, 2017). As agreed at our meeting on August 15, 2017 with the City and proponent representatives, we met on September 18 to discuss your comments and our responses. At that time we confirmed that the City, TRCA and the Seaton Landowners' Group will sign an agreement as set out in Sections 6 and 8 of the final ESR, to be known as the TRCA-City protocol. This protocol will provide details about and commitments for the next steps in the Seaton community development.

On September 6, 2017, the Seaton Landowners' Group (proponent of this study) issued the Notice of Completion signaling the start of the 30-day review for the three City roads subject of this Class EA Study. On September 6, the final Seaton Roads (Phases 3-4) Class EA Study was released for public, stakeholders and agencies review. As agreed at the August 15 meeting, the TRCA comments and the proponent's responses will be placed on the City of Pickering website.

Attached to this letter is a chart (Appendix A) showing our response to each of the TRCA comments. In addition to a response to each of the comments raised, this letter highlights some areas for which TRCA requested specific clarifications.

**Clarifications**

1. **Stormwater management for City Roads (Comment #5)**

The methods by which stormwater management will be addressed in a comprehensive manner for the entirety of the City road will be established in a signed agreement to be known as TRCA-City Protocol to be developed by the landowners, TRCA and City prior to detailed design. The City, as noted in Section 6 of the ESR, will be requiring the preparation of Functional Servicing and Stormwater Reports (FSSRs) for *each development and the related City roads, including the crossing structures. The preparation of the FSSRs and detailed design process will both occur in consultation with and to*

*satisfaction of the City of Pickering and TRCA with respect to the road design/construction through the Seaton NHS.*

**2. Quantity and Erosion Control Criteria (Comments #6 and 7)**

Section 4.6 and Table 4.9 quantity and erosion control criteria to be used at pre-design stage should read as follows:

We acknowledge that quantity control criteria is required for smaller tributaries to West Duffins Creek and within the Whitevale Creek catchment, with the updated Table 4.9 to be utilized at the pre-design stage as follows:

- West Duffins Creek Main Branch
  - Water quality control to enhanced level of protection
  - Erosion control based on the extended detention of the 25mm rainfall event for 120 hours, with a release rate of 0.6 L/s/ha and storage volume of 250 m3/imp.ha.
- All Other Catchments (West Duffins Creek tributaries, Whitevale Creek, Ganatsekiagon Creek)
  - Water quality control to enhanced level of protection
  - Erosion control based on the extended detention of the 25mm rainfall event for 120 hours, with a release rate of 0.6 L/s/ha and storage volume of 250 m3/imp.ha.Quantity controls as per the 2012 Duffins Creek Hydrology Update (Aquafor Beech Ltd.)

**3. Coordination of Stormwater Management Over Control (Comments #9 and 10)**

The assessment of potential over-control of stormwater will be coordinated by the Seaton Landowners to ensure mitigation of erosion and quantity control are not missed especially in the case where discharge is to watercourse reaches with Redside Dace and where planned stormwater management ponds are potentially too small.

Landowners have been provided with the ESR and specifically Figure 4.3 to ensure that potential over-control segments are coordinated. Stormwater management facilities will be reviewed and updated at **pre-design.** Landowners will be required to confirm adequate pond block sizes and the extent that over-control can be accommodated as part of **pre-design**.

**4. Costing (Comment #74)**

Further to our discussion about the costs for projects with TRCA staff on September 18, 2017 and your comments about the budgeting process by the City and the Seaton Landowners' Group, it is acknowledged that the cost of the projects and the required studies at the design stage is unknown. The costs provided in Section 1.2 of the ESR were not prepared, nor are they anticipated to be used for construction costing purposes. The capital costs provided in Section 1.2 were created for the purpose of categorizing the City roads in accordance with requirements of the Municipal Class EA. The initial Class EA designation (i.e., Schedule C) remains the same regardless of changes to the cost of the road construction over time.

**5. Evaluation of Alternative Design Concepts (Comment #78)**

Section 4.5 presents an accurate summary of the consideration of Alternative Design Concepts carried out for this study. The MESPA, 2014 confirmed the location of the recommended City roads based on the CPDP, 2006 which established these roads and the Seaton community. MESPA was based on an evaluation of alternative locations (complying with Phases 1-2 of the Class EA planning process). This Class EA Study, building on the MESPA examined Alternative Design Concepts per Phases 3-4 of the

Class EA process. The Seaton community is exceptional in that it was planned and established by the Ontario government using the Ontario Planning and Development Act (i.e., not the Ontario Planning Act) which gives the government the broadest possible powers to enshrine land uses.

The CPDP, which is the provincial plan for Seaton, established prior to the ownership by the Seaton Landowners' Group, confirmed the road locations, thereby reducing the flexibility in the MESPA and this Class EA Study to examine alternatives. That said, this Class EA Study considered a range of Alternative Design Concepts which focused on designing the City roads to address the City and Regional comments and since these design considerations used the same right of way requirements, they did not alter the potential for the roads to impact the natural environment (i.e., NHS) and the social environment (i.e., met the policies of the land use plans).

**6. TRCA Correspondence (Comment #81)**

We are pleased to offer the following clarifications:

a. Table 6.5 is a summary of the meetings only; all meeting notes for May 1, 2015 and March 6, 2017 meetings and related correspondence are found in Appendix 3.
b. TRCA email correspondence sent March 27, 2017 and June 8, 2015 were unintentionally left out of the draft ESR. They are included in Appendix 6 of the final ESR.
c. Steve Heuchert's email of May 21, 2015 regarding the status of the NFSSR documents was unintentionally left out of the draft ESR. A copy is attached to this response.

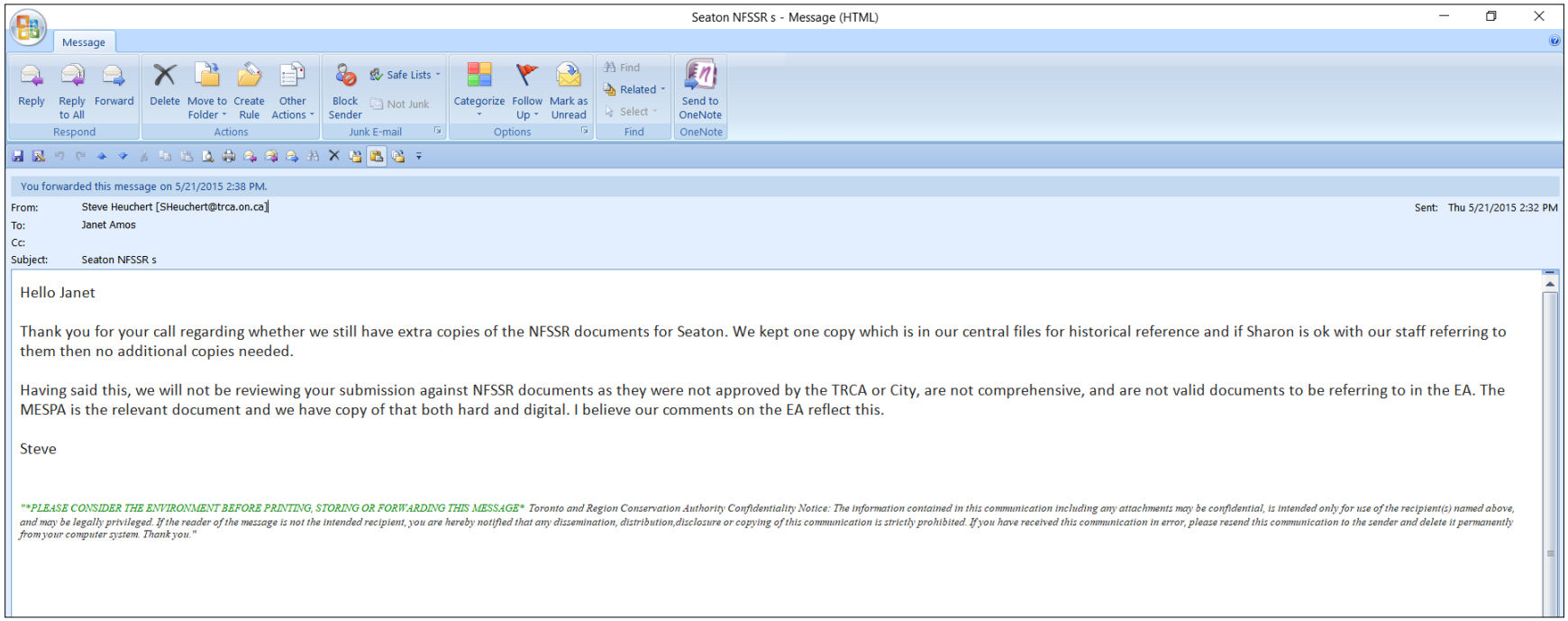
If you have any questions, please call the undersigned. We look forward to hearing from you and to your continued involvement in the development of the Seaton community.

Yours truly,

Janet Amos, RPP
**Amos Environment + Planning**
Project Manager

Encl.

cc. Ms Carolyn Woodland, TRCA
Ms Beth Williston, TRCA
Mr. Ross Pym, City of Pickering
Mr. Reg Webster, Reg Webster Consulting Inc.
Mr. Glenn Pitura, Arutip Consulting


Seaton NFSSR s - Message (HTML)
Message
Reply
Reply to All
Forward
Delete
Move to Folder
Create Rule
Other Actions
Block Sender
Safe Lists
Not Junk
Categorize
Follow Up
Mark as Unread
Find
Related
Select
Send to OneNote
Respond
Actions
Junk E-mail
Options
Find
OneNote
You forwarded this message on 5/21/2015 2:38 PM.
From: Steve Heuchert [SHeuchert@trca.on.ca]
Sent: Thu 5/21/2015 2:32 PM
To: Janet Amos
Cc:
Subject: Seaton NFSSR s
Hello Janet
Thank you for your call regarding whether we still have extra copies of the NFSSR documents for Seaton. We kept one copy which is in our central files for historical reference and if Sharon is ok with our staff referring to them then no additional copies needed.
Having said this, we will not be reviewing your submission against NFSSR documents as they were not approved by the TRCA or City, are not comprehensive, and are not valid documents to be referring to in the EA. The MESPA is the relevant document and we have copy of that both hard and digital. I believe our comments on the EA reflect this.
Steve
"*PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING, STORING OR FORWARDING THIS MESSAGE* Toronto and Region Conservation Authority Confidentiality Notice: The information contained in this communication including any attachments may be confidential, is intended only for use of the recipient(s) named above, and may be legally privileged. If the reader of the message is not the intended recipient, you are hereby notified that any dissemination, distribution,disclosure or copying of this communication is strictly prohibited. If you have received this communication in error, please resend this communication to the sender and delete it permanently from your computer system. Thank you."

## APPENDIX A: TRCA COMMENTS AND PROPONENT RESPONSES ON DRAFT ENVIRONMENTAL STUDY REPORT (ESR)

| # | TRCA COMMENTS (SEPTEMBER 19, 2017) | PROPONENT RESPONSE |
|---|---|---|
| **Natural Heritage System and Compensation** | | |
| 1 | The ESR does not provide the necessary analysis related to the natural environment. While some background information from the MESPA and the NFSSRs was summarized in the ESR, no new natural heritage information was presented. The Data Gap Checklist – Natural Heritage on page 22 of Appendix 3 states that there are no data gaps for the natural heritage system. The NFSSRs and MESPA however, identified areas where more study was required, such as at crossings 4 and 9. Furthermore, while the impacts to forest and wetland ELC communities were shown on the NHS crossing plans provided in Appendix 4, this information was not summarized or analyzed in the ESR. Detailed information regarding impacts to the natural heritage system will need to be presented at **detailed design** in order to identify where mitigation measures, such as retaining walls and edge management plans, will be required. | MESPA, 2014 confirmed the location of the recommended City roads based on the CPDP, 2006 which established these roads and the Seaton community. MESPA was based on an evaluation of alternative locations (complying with Phases 1-2 of the Class EA planning process). This Class EA Study, building on the MESPA examined Alternative Design Concepts per Phases 3-4 of the Class EA process.<br><br>Mitigation measures, such as retaining walls and edge management plans, will be identified in **detailed design**. |
| 2 | Table 3.7 lists the crossing type as “type not provided” for crossings 12, 16, 17, 18, 19 and 21. Furthermore, the wildlife passage section states “ecological study to be completed” to finalize the crossing structure size for crossings 4 and 9, however, no further ecological study has been completed. As the ESR did not provide new natural heritage information regarding the crossing structures and did not complete the required analysis, all crossing structures will need to be finalized. The results of this analysis should be used to inform the design for each project area, and as such the design information presented in the ESR may need to be revised at the **pre-design** and **detailed design** stages. | Table 3.7, in Section 3, Study Area Background, provides a historic summary of the original road crossing information prepared as a reference for this Class EA Study. The details of the recommended roads are summarized in Section 4 and the NHS crossings are addressed in the NHS Crossing maps found Appendix 4.<br><br>As discussed, NHS crossings will be re-examined at **pre-design**. |
| 3 | The issue of compensating for impacts to features in the natural heritage system has not been addressed in the ESR. In order to maintain the ecological function of the natural heritage system, natural features that are removed from the landscape will need to be quantified and compensated for either on site or at another location in the Seaton natural heritage system. Compensation should have been discussed in the ESR, however, will now need to be calculated on a site specific basis at the **detailed design** stage using future TRCA standards, recognizing that these may change from the time of ESR filing. | As noted in Section 6 (and Section 8) of the final ESR, a signed agreement to be known as TRCA-City Protocol will be developed by the landowners, TRCA and City prior to detailed design.<br><br>Compensation will be an item addressed in the TRCA-City protocol. Compensation will be calculated on a site specific basis at the **detailed design** stage using TRCA standards. The study team recognizes that these may change from the time of ESR filing to incorporate additional areas of compensation (e.g., grading from adjacent subdivisions). |
| 4 | As part of the EA consultation process, a dripline was staked along the north end of FC3 and FC4. This dripline was field verified to ensure that there was enough room between the employment collector and the forest to allow for LIDs to provide water to the forest and watercourses south of the road, once the | As part of the response to TRCA comments, an estimate for the space required to accommodate the future LIDs in this specific area was examined. The road alignment allows for these LIDs to |

| # | TRCA COMMENTS (SEPTEMBER 19, 2017) | PROPONENT RESPONSE |
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| | upstream drainage area is cut off by development. This staked dripline does not appear to have been included in the ESR and an estimate for the space required to accommodate the future LIDs has not been identified. It is thus unclear at this time whether the road alignment allows for these LIDs to be constructed without impacts to the forest edge. While this analysis will have to be completed at detailed design, it should have been completed at the ESR stage, as revisions to the road through this area may be necessary. The LIDs will also require the construction of pipes under the road to bring water to the LIDs.<br><br>Appendix C6-A Figure 2 in the MESPA states: "road is immediately north of Headwater Reaches WA15-1 (HDFC11) and W15-1 (HDFC12); the water balance of each to be addressed during road design."<br><br>Please also note that on page 6-23 and 6-24, the notes state that Janet Amos has "revised the survey file sent by Barnes to exclude stake D20". It is not appropriate to revise a survey file to remove a stake and the original line should be used for any future discussions in this area. This will need to be satisfied at **pre-design**. | be constructed without impacts to the forest edge. Further analysis will be completed at detailed design to ensure that this condition is met. Following the completion of the Class EA Study (i.e., after the 30-day review period) minor revisions to the City roads through this area may be necessary and minor changes do not require a revision to this Class EA Study.<br><br>In response to comments from TRCA at the May 1, 2015 meeting about the available space for an LID in this location, we provided correspondence between members of the consulting team in the ESR dated June 5, 2015. The email was compiled by Meaghan Kieferle, Plans Technician, GHD and not Janet Amos.<br><br>The drip line, as originally staked in 2013, was shown and in addition, an opinion was provided by an ecologist for the study team that at one location (D20) the drip line should be redefined during the detailed design stage due to field notes (circulated in June 2015 to TRCA). The ecologist found at site inspection on June 1, 2015 that D20 (a non-native Manitoba maple) "juts out due to broken limb; branch still alive, but damage and will likely die". The ecologist further noted that "if broken branches are not counted, dripline should follow approximately straight line, with smatter jut out of ~2m for Manitoba maple". As a result, to illustrate the results, if one was to remove the branch in question, a revised plan was circulated to TRCA. Nothing in the report alters the original survey.<br><br>At the **pre-design** and **detailed design** stages the bio-swale will be designed and, if a change to the original survey is required, it will be done closer to the time of construction once the LID has been designed and in consultation with TRCA (e.g., by making a formal submission to relocate the drip line). Nothing in the results of this site specific review indicate that a recommendation to move the road at this time. |

| # | TRCA COMMENTS (SEPTEMBER 19, 2017) | PROPONENT RESPONSE |
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| **Stormwater Management** | | |
| 5 | Section 4.6.1 states that "…details pertaining to stormwater management facility permits are most appropriately completed at the detailed design stage." However, given that various proponents will be responsible for designing stormwater management measures it is important that the Class EA contains clear direction regarding **how stormwater management is to be addressed moving forward and who is responsible**. **In responding to this letter**, please identify in text and on a figure who will be responsible for each road segment as per Figure 4.3 to ensure SWM requirements are addressed in a comprehensive manner for the entirety of the road as part of the subdivision/pond work or elsewhere. **These details should be addressed now** to avoid delays at the detailed design/permitting stage. It is also imperative at this stage to ensure property requirements needed to implement on site SWM controls are acquired. | The TRCA-City Protocol will be agreed upon by the TRCA, Seaton Landowners' Group and City prior to detailed design. The ESR also noted that the City will be requiring the preparation of Functional Servicing and Stormwater Reports (FSSRs) for *each development and the related City roads, including the crossing structures. The preparation of the FSSRs and detailed design process will both occur in consultation with and to satisfaction of the City of Pickering and TRCA with respect to the road design/construction through the Seaton NHS.* |
| 6 | The quantity control criteria documented in Section 4.6 and Table 4.9 are incorrect. As per the 2012 Duffins Creek Hydrology Update (Aquafor Beech Ltd.), catchments draining to the main branch of the West Duffins Creek do not require quantity control. However, quantity control is required for other subcatchments which drain to smaller tributaries and to the Whitevale Creek subcatchment. In responding to this letter, please correct the quantity **criteria found in the ESR**, confirm with TRCA staff that the changes have been made and use the correct criteria at the **pre-design** stage. | We acknowledge that quantity control criteria is required for smaller tributaries to West Duffins Creek and within the Whitevale Creek catchment, with the updated Table 4.9 to be utilized at the pre-design stage as follows:<br>- West Duffins Creek Main Branch<br>  o Water quality control to enhanced level of protection<br>  o Erosion control based on the extended detention of the 25mm rainfall event for 120 hours, with a release rate of 0.6 L/s/ha and storage volume of 250 m3/imp.ha.<br>- All Other Catchments (West Duffins Creek tributaries, Whitevale Creek, Ganatsekiagon Creek)<br>  o Water quality control to enhanced level of protection<br>  o Erosion control based on the extended detention of the 25mm rainfall event for 120 hours, with a release rate of 0.6 L/s/ha and storage volume of 250 m3/imp.ha.<br>  o Quantity controls as per the 2012 Duffins Creek Hydrology Update (Aquafor Beech Ltd.) |
| 7 | The erosion control criteria documented in Section 4.6.1 and Table 4.9 should specify extended detention of the 25 mm rainfall event for 120 hours, and a release rate of 0.6 L/s/ha and storage volume | Comment #6 above provides the updated Table 4.9 criteria. |

| # | TRCA COMMENTS (SEPTEMBER 19, 2017) | PROPONENT RESPONSE |
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| | of 250 m3/imp.ha. Please update the erosion control criteria in the ESR, confirm with TRCA staff that the changes have been made and use the correct criteria in the **pre-design** stage. | |
| 8 | There are a number of road segments identified in the MESPA or an NFSSR as being directed to a SWMF which are not identified in the Class EA, Figure 4.3 (Appendix 4) as road drainage to be directed to a SWMF. As part of the **pre-design**, please provide documentation to support Figure 4.3, including descriptions of why certain road segments cannot be directed to a SWMF. | Figure 4.3 provides the potential over-control areas to be reviewed and updated at pre-design.<br><br>Further assessment and documentation on road drainage will be provided at **pre-design**. |
| 9 | There are a number of road segments identified on Figure 4.3 (Appendix 4) as having potential for over-control within a nearby SWMF. **In responding to this letter,** please outline how the assessment of this potential will be coordinated so that opportunities to effectively mitigate erosion and quantity control are not missed. | Landowners have been provided a copy of the ESR and specifically Figure 4.3 to ensure that potential over-control segments are coordinated. Stormwater management facilities will be reviewed and updated at **pre-design**. |
| 10 | A number of the Ganatsekiagon SWMF's, identified on Figure 4.3 (Appendix 4) as providing direct stormwater management or having potential for over-control for the City roads, discharge to watercourse reaches with Redside Dace requirements under the Endangered Species Act. Through the subdivision development process, it has been flagged that the SWMF blocks for several subdivisions with approved draft plans are too small. **In responding to this letter**, please outline how this issue be coordinated. | Landowners will be required to confirm adequate pond block sizes and the extent that over-control can be accommodated as part of **pre-design**. |
| **Watercourse Crossings - General** | | |
| 11 | It is not clear from Table 3.7 or from the Road Checklists (Appendix 3-3) which criteria are controlling the crossing dimensions. Please clarify and include this information for all watercourse crossings, recognizing that all information will need technical review at the **pre-design** and **detailed design** stages and that no crossing dimensions proposed in the ESR are be considered acceptable to TRCA staff. | Roads Checklists will be reviewed and updated at **pre-design**. |
| 12 | As per the Road Checklists (Appendix 3-3), the hydraulic analysis from the NFSSRs (2013) have not been updated for this Class EA. TRCA staff did not complete a full review of any of the NFSSRs. Therefore any analysis from a NFSSR which is used for the design of a crossing should be updated and included as an appendix. Please include the hydraulic analysis for all crossings as part of the **pre-design** work. **Without reviewing this information, TRCA staff cannot confirm that flood risk will not increase as a result of the proposed crossings or confirm that the MESPA criteria have been met**. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff. | Hydraulic analysis for all crossings will be reviewed and updated at **pre-design**. |
| **East-West Arterial Road, Crossing 2** | | |
| 13 | The Road Checklists (Appendix 3-3) list a length of 53 m while Table 3.7 lists a length of 50 m. Please review for consistency and address at the **pre-design stage.** | NHS Crossing #2 will be reviewed and updated at **pre-design**. |
| 14 | Please add the existing and proposed floodline, 100 year erosion limit, and the meander belt width to Figure CR2 (Appendix 4-2-3). Please address at the **pre-design stage.** | Floodlines, as updated by the Seaton Landowners' Group and submitted to TRCA on March 31, 2017, are shown on all NHS Crossing maps in Appendix 4. |

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| | | The meander belt width was not considered in the recommendation of the geomorphic span requirement as this recommendation was based on a localized, risk-based assessment that took into account channel planform in vicinity of the crossing and an appropriate factor of safety. This approach is in conformance with the 100-year erosion limit approach in the TRCA Road Crossing Guideline. Since the meander was not a governing factor in the span determination, and reaches are contributing habitat for Redside Dace, it was not included on the figure. No changes to the figure are proposed.<br><br>Floodlines, erosion limits and meander belt widths will be reviewed and updated at **pre-design**. |
| 15 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N19 FSSR (2013) recommended a span of 12.81 m based on the 100 year erosion limit. TRCA staff did not complete a full review of any of the NFSSRs; therefore, any analysis from a NFSSR should be included as an appendix in this report. Section 4.1.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) references the meander amplitude and concludes that the recommended span of 12.81 m is sufficient. This updated assessment is not adequate as the updated assessment must show that the recommended width is sufficient to span the 100 year erosion limit. The 100 year erosion limit was identified in Section C6.4.2 of the MESPA as the minimum criteria to minimize the risks of damage to the bridge / culvert from watercourse channel migration, erosion and scour, and avoid the need for future channel realignment or hardening. As such, this crossing as proposed in the ESR should not be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | The Beacon Geomorphic Assessment (2017) identified span requirements for NHS watercourse crossings referencing the governing meander amplitude. Due to the scale of the watercourse and degree of vegetative cover, migration rates could not be accurately determined. In lieu of this approach, the Beacon report applied a 2.1 m factor of safety and stated that the purpose of this factor of safety is to address the 100 year erosion limit. This approach was deemed consistent with the TRCA Crossings Guideline for Valley and Stream Corridors which defers to Table 4 of the Provincial Policy Statement, 2014 (Technical Guide River & Stream Systems: Erosion Hazard Limit) for watercourses less than 3 m in width (which recommends a 1 m erosion allowance).<br><br>The Beacon Geomorphic Assessment (2017) summarized relevant sections of the NFSSRs to provide relevant context to the report. While our study considered this information, the study recommendations were developed based on field observations documented in support of the Class EA. The geomorphic assessment provides sufficient background and field-based information to justify the study recommendations. Inclusion of the NFSSRs as an appendix is not proposed. |

| # | TRCA COMMENTS (SEPTEMBER 19, 2017) | PROPONENT RESPONSE |
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| | | Floodlines, erosion limits and meander belt widths will be reviewed and updated at **pre-design**. |
| 16 | TRCA staff noted that this reach was identified as Redside Dace contributing habitat. At a minimum, this ESR should identify the regulatory requirements under the Endangered Species Act to ensure the proposed sizes are reasonable for coordination and budgeting purposes. TRCA staff respects that this will be addressed in consultation with MNRF staff when this project moves forward to **pre-design**. | The recommended crossing size provided through the ESR considers hydraulic, ecological and geomorphic requirements. As the contributing habitat status of the reaches was known at the time of our study and documented in the ESR, it is our opinion that the proposed crossing sizes are reasonable. It is understood and noted in our report that further consultation with MNRF will be required as the project moves forward to pre-design.<br><br>Requirements of the Endangered Species Act will be reviewed and updated at **pre-design**. |
| 17 | The Road Checklists (Appendix 3-3) states that the N19 FSSR (2013) recommended that stormwater from the road at crossing 2 could be directed to a SWMF (potentially #40 or #41). Table 3.7 states that stormwater management is to be determined at detailed design. Figure 4.3 (Appendix 4) identified potential quantity control for uncontrolled collector road to be accommodated through over-control within SWMF #40 to be confirmed at detailed design. The Road Checklists (Appendix 3-3) states that there is potential for quantity control at SWMF #40. Thus, it is not clear what is being proposed or what recommendations should be explored by whom. If possible, drainage from the road should be directed to a SWMF to provide quality, erosion, and quantity control. If it is not feasible to direct drainage from the road to a SWMF, then over-control should be explored. However, over-control is not ideal because quality and erosion control shall still need to be addressed through on-site control measures. **It is important for coordinating and budgeting that the preliminary SWM plan identifies feasible opportunities otherwise chances to properly mitigate quality, erosion, and flooding impacts may be missed.** As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | Roads Checklists and stormwater management facilities will be reviewed and updated at **pre-design**.<br><br>Figure 4.3 provides the potential over-control areas which will be confirmed at **pre-design**.<br><br>A diagram will be provided in the TRCA-City Protocol showing the areas to be addressed in each Functional Servicing and Stormwater Reports. |
| **East-West Arterial Road, Crossing 3** | | |
| 18 | The Road Checklists (Appendix 3-3) lists a length of 25 m while Table 3.7 lists a length of 45 m. Please review for consistency and confirm that flood risk will not increase as a result of the proposed crossing. Please review for consistency and address at the **pre-design stage.** | NHS Crossing #3 will be reviewed and updated at **pre-design**. |
| 19 | Please add the existing and proposed floodline, 100 year erosion limit, and the meander belt width to Figure CR3 (Appendix 4-2-3). Please address at the **pre-design stage.** | Floodlines, erosion limits and meander belt widths will be reviewed and updated at **pre-design**. |
| 20 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N18&19 FSSR | Floodlines, erosion limits and meander belt widths will be |

| # | TRCA COMMENTS (SEPTEMBER 19, 2017) | PROPONENT RESPONSE |
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| | (2013) recommended a span of 6 m based on a risk based approach. TRCA staff did not complete a full review of any of the NFSSRs; therefore, any analysis from a NFSSR should be included as an appendix in this report. Section 4.1.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) concludes that the recommended span of 6 m is sufficient. However, the risk based approach does not achieve the 100 year erosion limit, which was identified in Section C6.4.2 of the MESPA as the minimum. In addition, it is not clear why five times the bankfull width was used. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | reviewed and updated at **pre-design**.<br><br>The Beacon Geomorphic Assessment (2017) identified span requirements for NHS watercourse crossings referencing the governing meander amplitude. Due to the scale of the watercourse and degree of vegetative cover, migration rates could not be accurately determined. In lieu of this approach, our report applied a 2.1 m factor of safety and stated that the purpose of this factor of safety is to address the 100 year erosion limit. This approach was deemed consistent with the TRCA Crossings Guideline for Valley and Stream Corridors which defers to Table 4 of the PPS (Technical Guide River & Stream Systems: Erosion Hazard Limit) for watercourses less than 3 m in width (which recommends a 1 m erosion allowance). The Beacon Geomorphic Assessment (2017) summarized relevant sections of the NFSSRs to provide relevant context to the report. While the Beacon study considered this information, the study recommendations were developed based on field observations documented in support of the Class EA. The geomorphic assessment provide sufficient background and field-based information to justify the study recommendations. Inclusion of the NFSSRs as an appendix is not proposed.<br><br>Existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design** |
| 21 | TRCA staff noted that this reach was identified as Redside Dace contributing habitat. At a minimum, this EA should identify the regulatory requirements under the Endangered Species Act to ensure the proposed sizes are reasonable for coordination and budgeting purposes. TRCA staff respects that this will be addressed in consultation with MNRF staff when this project moves forward to **pre-design**. | Requirements of the Endangered Species Act will be reviewed and updated at **pre-design**. |
| **East-West Arterial road, Crossing 4** | | |
| 22 | The Road Checklists (Appendix 3-3) lists a length of 50 m and a width of 1.9 m while Table 3.7 lists a length of 42 m and a width of 1.85 m. Please review for consistency and address at the **pre-design stage.** | NHS Crossing #4 will be reviewed and updated at **pre-design**. |
| 23 | Please add the existing and proposed floodline to Figure CR4 (Appendix 4-2-3). Further, as per the recommended design from Table 3.7, Figure CR4 should show two culverts. Please address at the **pre-** | Floodlines, erosion limits and meander belt widths will be reviewed and updated at **pre-design**. |

| # | TRCA COMMENTS (SEPTEMBER 19, 2017) | PROPONENT RESPONSE |
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| | **design stage.** | |
| 24 | The Road Checklists (Appendix 3-3) states that the N18 FSSR (2013) recommended that stormwater from the road at crossing 4 could be directed to SWMF #18. Table 3.7 states that stormwater management is to be determined at detailed design. Figure 4.3 (Appendix 4) identified potential quantity control for uncontrolled collector road to be accommodated through over-control within SWMF #36. The Road Checklists (Appendix 3-3) states that there is potential for quantity control at SWMF #36. Thus, it is not clear what is being proposed or what recommendations should be explored moving forward. If possible, drainage from the road should be directed to a SWMF to provide quality, erosion, and quantity control. If it is not feasible to direct drainage from the road to a SWMF, then over-control should be explored. However, over-control is not ideal because quality and erosion control shall still need to be addressed through on-site control measures. **These details should be addressed at the pre-design stage** to avoid delays at the detailed design/permitting stage. It is also imperative at this stage to ensure property requirements needed to implement on site SWM controls are acquired. | Roads Checklists and stormwater management facilities will be reviewed and updated at **pre-design**.<br><br>Figure 4.3 provides the potential over-control areas which will be confirmed at **pre-design**.<br><br>A diagram will be provided in the TRCA-City Protocol showing the areas to be addressed in each Functional Servicing and Stormwater Reports. |
| **East-West Arterial road, Crossing 9** | | |
| 25 | The Road Checklists (Appendix 3-3) lists a length of 53 m while Table 3.7 lists a length of 48 m. Further, the Road Checklists (Appendix 3-3) and Figure CR-9 includes a recommendation for an open bottom which is not included on Table 3.7. Please review for consistency and address at the **pre-design stage.** | NHS Crossing #9 will be reviewed and updated at **pre-design**. |
| 26 | Please add the existing and proposed floodline, and the 100 year erosion limit to Figure CR9 (Appendix 4-2-3). Please address at the **pre-design stage.** | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 27 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N18 FSSR (2013) recommended a span of 7 m but it is not clear how this recommendation was determined. TRCA staff did not complete a full review of any of the NFSSRs; therefore, any analysis from a NFSSR should be included as an appendix in this report. Section 4.1.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) concludes that the recommended span of 7 m is sufficient. This updated assessment is not adequate as the updated assessment must show that the recommended width is sufficient to span the 100 year erosion limit. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 28 | The Road Checklists (Appendix 3-3) states that the N18 FSSR (2013) recommended that stormwater from the road at crossing 9 could be directed to a SWMF (potentially #18 or #31). Table 3.7 states that stormwater management is to be determined at detailed design. Figure 4.3 (Appendix 4) identified potential quantity control for uncontrolled collector road to be accommodated through over-control within SWMF #31. The Road Checklists (Appendix 3-3) states that there is potential for quantity control at SWMF #31. Thus, it is not clear what is being proposed or what recommendations should be explored moving forward. If possible, drainage from the road should be directed to a SWMF to provide quality, | Roads Checklists and stormwater management facilities will be reviewed and updated at **pre-design**.<br><br>Figure 4.3 provides the potential over-control areas which will be confirmed at **pre-design**.<br><br>A diagram will be provided in the TRCA-City Protocol showing |

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| | erosion, and quantity control. If it is not feasible to direct drainage from the road to a SWMF, then over-control should be explored. However, over-control is not ideal because quality and erosion control shall still need to be addressed through on-site control measures. **These details should be addressed at the pre-design stage** to avoid delays at the detailed design/permitting stage. It is also imperative at this stage to ensure property requirements needed to implement on site SWM controls are acquired. | the areas to be addressed in each Functional Servicing and Stormwater Reports. |
| **Sideline 24, Crossing 11** | | |
| 29 | The Road Checklists (Appendix 3-3) lists a width of 5.0 m while Table 3.7 lists a width of 7.0 m. Please review for consistency and document how the span of 7.0 m was determined. Please review for consistency and address at the **pre-design stage.** | NHS Crossing #11 will be reviewed and updated at **pre-design**. |
| 30 | Please add the existing and proposed floodline to Figure CR11 (Appendix 4-2-3). Please address at the **pre-design stage.** | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 31 | TRCA staff have noted that this reach was identified as Redside Dace contributing habitat. At a minimum, this EA should identify the regulatory requirements under the Endangered Species Act to ensure the proposed sizes are reasonable for coordination and budgeting purposes. TRCA staff respects that this will be addressed in consultation with MNRF staff when this project moves forward to **pre-design**. | Requirements of the Endangered Species Act will be reviewed and updated at **pre-design**. |
| 32 | The Road Checklists (Appendix 3-3) states that the N16 FSSR (2013) recommended that stormwater from the road at crossing 11 could potentially be directed to a SWMF or on-site treatment within the mixed use block on the north side of Taunton Rd (potentially SWMF #12). Table 3.7 states that stormwater management is to be determined at detailed design and list some options for on-site quality treatment. Thus, it is not clear what is being proposed or what recommendations should be explored by whom moving forward. If possible, drainage from the road should be directed to a SWMF to provide quality, erosion, and quantity control. If it is not feasible to direct drainage from the road to a SWMF, then over-control should be explored. However, over-control is not ideal because quality and erosion control shall still need to be addressed through on-site control measures. The proposed stormwater mitigation measures must address quality, erosion, and flooding. **These details should be addressed at the pre-design stage** to avoid delays at the detailed design/permitting stage. It is also imperative at this stage to ensure property requirements needed to implement on site SWM controls are acquired. | Roads Checklists and stormwater management facilities will be reviewed and updated at **pre-design**.<br><br>Figure 4.3 provides the potential over-control areas which will be confirmed at **pre-design**.<br><br>A diagram will be provided in the TRCA-City Protocol showing the areas to be addressed in each Functional Servicing and Stormwater Reports. |
| **Sideline 24, Crossing 12** | | |
| 33 | Please add the existing and proposed floodline, 100 year erosion limit, and meander belt width to Figure CR12 (Appendix 4-2-3). Please address at the **pre-design stage.** | NHS Crossing #12 will be reviewed and updated at **pre-design**.<br><br>The meander belt width was identified on Figure 2F of the 2017 Geomorphic Assessment and was identified on NHS Crossing Figure CR12. The meander belt width was not considered in the recommendation of the geomorphic span requirement as this |

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| | | recommendation was based on a localized, risk-based assessment that took into account channel planform in vicinity of the crossing and an appropriate factor of safety. This approach is in conformance with the 100-year erosion limit approach in the TRCA Road Crossing Guideline. Since the meander was not a governing factor in the span determination, and reaches are contributing habitat for Redside Dace, it was not included on the figure. No changes to the figure are proposed.<br><br>Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 34 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N19 FSSR (2013) recommended a span of 15 m. Section 4.1.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) references the meander amplitude and 100 year erosion limit and recommends a span of 19 m. Please provide documentation so that TRCA staff can verify the recommended span. In addition, the Road Checklists (Appendix 3-3) lists a width of 19 m but Table 3.7 lists a width of 15 m. Figure CR12 lists a width of 18.6 m. Please review for consistency. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | The Beacon Geomorphic Assessment (2017) recommended a revised geomorphic span of 19 m based on more recent field observations and mapping by Beacon (2017). NHS Crossing Figure CR12 shows an 18.6 m span which reflects the structure size that most closely addresses the geomorphic span requirement.<br><br>Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 35 | TRCA staff have noted that this reach was identified as Redside Dace occupied habitat. It is our understanding that MNFR's requirement under the Endangered Species Act will be to span the meander belt width. Thus, please include documentation of the meander belt width to ensure the proposed span is reasonable for coordination and budgeting purposes. TRCA staff respects that this will be addressed in consultation with MNRF staff when this project moves forward to **pre-design**. | Requirements of the Endangered Species Act will be reviewed and updated at **pre-design**. |
| 36 | The Road Checklists (Appendix 3-3) states that the N19 FSSR (2013) recommended that quantity control for the road at crossing 12 could be provided with over-control in SWMF #22a. Then the Checklist states that the Class EA finding is that over-control cannot be provided. Additional information, including grading constraints and/or pond block constraints, is needed to document this new finding. It is not clear what is being proposed or what recommendations should be explored by whom moving forward. It is important for coordinating and budgeting that the preliminary SWM plan identifies feasible opportunities otherwise chances to properly mitigate quality, erosion, and flooding impacts may be missed. **These details should be addressed at the pre-design stage** to avoid delays at the detailed design/permitting stage. It is also imperative at this stage to ensure property requirements needed to implement on site SWM controls are acquired. | Roads Checklists and stormwater management facilities will be reviewed and updated at **pre-design**.<br><br>Figure 4.3 provides the potential over-control areas which will be confirmed at **pre-design**.<br><br>A diagram will be provided in the TRCA-City Protocol showing the areas to be addressed in each Functional Servicing and Stormwater Reports. |

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| **Employment Collector Road, Crossing 16** | | |
| 37 | Please document how the recommendation in Table 3.7 for three 250 mm culverts was determined since it does not match the hydraulic findings of the N21 FSSR which are documented in the Road Checklists (Appendix 3-3). Please review for consistency. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | NHS Crossing #16 will be reviewed and updated at **pre-design**.<br><br>NHS Crossing map CR16 shows three 250mm culverts. This was based on the hydraulic (not geomorphology) findings of NFSSR, Neighbourhood 21 – Sernas, August 2013 and Infrastructure Ontario Phase II Submission – GHD, July 2014 |
| **Employment Collector Road, Crossing 17** | | |
| 38 | Please add the existing and proposed floodline, and 100 year erosion limit to Figure CR17 (Appendix 4-2-3). Please address at the **pre-design stage.** | NHS Crossing #17 will be reviewed and updated at **pre-design**. |
| 39 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N21 FSSR (2013) concluded the hydraulic span of 6.0 m was sufficient. However, Table 4 the Beacon Geomorphic Assessment lists a NFSSR span recommendation of 10 m. Please clarify what is recommended in the N21 FSSR for this crossing. TRCA staff did not complete a full review of any of the NFSSRs; therefore, any analysis from a NFSSR should be included as an appendix in this report. Further please demonstrate that the crossing will span the 100 year erosion limit. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.**<br><br>The NFSSR identifies a hydraulic span of 6 m but an overall design span of 10 m. The geomorphic assessment will be corrected to be consistent in the NFSSR recommended span of 10 m. As there was no geomorphic design requirement identified for this crossing of a swale, the 100-year erosion limit was not relevant. |
| **Employment Collector Road, Crossing 18** | | |
| 40 | Please add the existing and proposed floodline, and 100 year erosion limit to Figure CR18 (Appendix 4-2-3). Please address at the **pre-design stage.** | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 41 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N21 FSSR (2013) concluded a span of 3.6 m was sufficient based on a risk based approach. However, Table 4 the Beacon Geomorphic Assessment lists a NFSSR span recommendation of 25 m. TRCA staff did not complete a full review of any of the NFSSRs; therefore, any analysis from a NFSSR should be included as an appendix in this report. Further, the crossing span must show that the recommended width is sufficient to span the 100 year erosion limit. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.**<br><br>The Beacon Geomorphic Assessment (2017) summarized relevant sections of the NFSSRs from a geomorphic perspective. As the span was not driven by geomorphic requirements, revisions to the Beacon Geomorphic Assessment (2017) are not proposed. |
| 42 | The Road Checklists (Appendix 3-3) states that the N21 FSSR (2013) recommended that stormwater from the road at crossing 18 could be directed to SWMF #36. Table 3.7 states that stormwater management is to be determined at detailed design. Figure 4.3 (Appendix 4) identified potential quantity control for uncontrolled road to be accommodated through over-control within SWMF #63. The Road Checklists (Appendix 3-3) states that there is potential for quantity control at SWMF #63. Thus, it is not | Roads Checklists and stormwater management facilities will be reviewed and updated at **pre-design**.<br><br>Figure 4.3 provides the potential over-control areas which will be confirmed at **pre-design**. |

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| | clear what is being proposed or what recommendations should be explored by whom moving forward. If possible, drainage from the road should be directed to a SWMF to provide quality, erosion, and quantity control. If it is not feasible to direct drainage from the road to a SWMF, then over-control should be explored. However, over-control is not ideal because quality and erosion control shall still need to be addressed through on-site control measures. It is important for coordinating and budgeting that the preliminary SWM plan identifies feasible opportunities otherwise chances to properly mitigate quality, erosion, and flooding impacts may be missed. **These details should be addressed at the pre-design stage** to avoid delays at the detailed design/permitting stage. It is also imperative at this stage to ensure property requirements needed to implement on site SWM controls are acquired. | A diagram will be provided in the TRCA-City Protocol showing the areas to be addressed in each Functional Servicing and Stormwater Reports. |
| **Employment Collector Road, Crossing 19** | | |
| 43 | Please add the existing and proposed floodline, 100 year erosion limit, and the meander belt width to Figure CR19 (Appendix 4-2-3). Please address at the **pre-design stage.** | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 44 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N19 FSSR (2013) concluded the span should be based on hydraulic and wildlife passage. TRCA staff did not complete a full review of any of the NFSSRs; therefore, any analysis from a NFSSR should be included as an appendix in this report. Further, the crossing span must show that the recommended width is sufficient to span the 100 year erosion limit. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | The Beacon Geomorphic Assessment (2017) identified span requirements for NHS watercourse crossings referencing the governing meander amplitude. Due to the scale of the watercourse and degree of vegetative cover, migration rates could not be accurately determined. In lieu of this approach, the Beacon report applied a 2.1 m factor of safety and stated that the purpose of this factor of safety is to address the 100 year erosion limit. This approach was deemed consistent with the TRCA Crossings Guideline for Valley and Stream Corridors which defers to Table 4 of the PPS (Technical Guide River & Stream Systems: Erosion Hazard Limit) for watercourses less than 3 m in width (which recommends a 1 m erosion allowance).<br><br>The Beacon Geomorphic Assessment (2017) summarized relevant sections of the NFSSRs to provide relevant context to the report. While the Beacon study considered this information, the study recommendations were developed based on field observations documented in support of the Class EA. The Beacon Geomorphic Assessment (2017) provides sufficient background and field-based information to justify the study recommendations. Inclusion of the NFSSRs as an appendix is not proposed. |
| 45 | TRCA staff noted that this reach was identified as Redside Dace contributing habitat. At a minimum, this | Requirements of the Endangered Species Act will be reviewed |

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| | EA should identify the regulatory requirements under the Endangered Species Act to ensure the proposed sizes are reasonable for coordination and budgeting purposes. TRCA staff respects that this will be addressed in consultation with MNRF staff when this project moves forward to **pre-design**. | and updated at **pre-design**. |
| **Employment Collector Road, Crossing 21** | | |
| 46 | Please add the existing and proposed floodline, 100 year erosion limit, and the meander belt width to Figure CR21 (Appendix 4-2-3). Please address at the **pre-design stage.** | Floodlines, existing geomorphic conditions and 100-year erosion limits will be reviewed and updated as appropriate at **pre-design.** |
| 47 | Section 2.2.2.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) states that the N19 FSSR (2013) recommended a span of 9.3 m based on a risk based approach. Section 4.1.2 of the Beacon Geomorphic Assessment (Appendix 3-2-3) references the meander amplitude and 100 year erosion limit and recommends a span of 13 m. Please provide documentation so that TRCA staff can verify the recommended span. As such, no crossings proposed in the ESR should be considered acceptable to TRCA staff and will need to be addressed at the **pre-design stage**. | NHS Crossing #21 will be reviewed and updated at **pre-design**. |
| 48 | TRCA staff have noted that this reach was identified as Redside Dace contributing habitat. At a minimum, this EA should identify the regulatory requirements under the Endangered Species Act to ensure the proposed sizes are reasonable for coordination and budgeting purposes. TRCA staff respects that this will be addressed in consultation with MNRF staff when this project moves forward to **pre-design**. | Requirements of the Endangered Species Act will be reviewed and updated at **pre-design**. |
| 49 | The Road Checklists (Appendix 3-3) states that the N19 FSSR (2013) recommended that stormwater from the road at crossing 21 could be directed to a SWMF #54. Table 3.7 states that stormwater management is to be determined at detailed design. Figure 4.3 (Appendix 4) identified potential quantity control for uncontrolled collector road to be accommodated through over-control within SWMF #54 to be confirmed at detailed design. The Road Checklists (Appendix 3-3) states that there is potential for quantity control at SWMF #54. Thus, it is not clear what is being proposed or what recommendations should be explored by whom moving forward. If possible, drainage from the road should be directed to a SWMF to provide quality, erosion, and quantity control. If it is not feasible to direct drainage from the road to a SWMF, then over-control should be explored. However, over-control is not ideal because quality and erosion control shall still need to be addressed through on-site control measures. It is important for coordinating and budgeting that the preliminary SWM plan identifies feasible opportunities otherwise chances to properly mitigate quality, erosion, and flooding impacts may be missed. **These details should be addressed at the pre-design stage** to avoid delays at the detailed design/permitting stage. It is also imperative at this stage to ensure property requirements needed to implement on site SWM controls are acquired. | Roads Checklists and stormwater management facilities will be reviewed and updated at **pre-design**.<br><br>Figure 4.3 is provides the potential over-control areas which will be confirmed at **pre-design**.<br><br>A diagram will be provided in the TRCA-City Protocol showing the areas to be addressed in each Functional Servicing and Stormwater Reports. |
| **Trails** | | |
| 50 | Table 3.6 notes that trail design will need to be considered as a part of this work. It then goes on to reference the Road Crossing checklist which defers the trail work to detailed design. As noted above, | The Seaton Trails Plan was referenced in the ESR for background only. The Seaton Trails Plan has no status. This |

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| | road design and crossing spans will need to be re-examined in the next phase of work to determine whether pedestrian passage is also required at each of the crossings within the NHS. This will need to be addressed at **pre-design**. | ESR addressed the three subject City roads and not off-road trails. If trails associated with road planning are identified by the City then appropriate trail connections will be reviewed at **pre-design**. |
| 51 | Section 3.2.9 c) references the Seaton Natural Heritage System Management Plan and Master Trails Plan. The Master Plan identifies several primary trail connections. Please ensure all connections as identified in that report are carried forward into the **pre-design** stage and that crossing structures will be sized to accommodate the trail users throughout as part of the proposed sustainable community design within Seaton. | The Seaton Trails Plan was referenced in the ESR for background only. The Seaton Trails Plan has no status. This ESR addressed the three subject City roads and not off-road trails. If trails associated with road planning are identified by the City then appropriate trail connections will be reviewed at **pre-design**. |
| **Hydrogeology** | | |
| 52 | Please refer to 'Hydrogeological Assessment Submissions : Conservation Authority Guidelines for Development Applications' for guidance in preparing the **detailed design** submission. It is available at the following weblink : http://www.trca.on.ca/dotAsset/214690.pdf. In particular, Table 1 should provide a useful checklist of general expectations. | Noted. |
| 53 | The draft ESR does not clearly identify areas in which groundwater concerns are anticipated. Key areas, such as where infrastructure proposed in or adjacent to wetland areas, should be identified. In addition, areas of groundwater upwellings should be identified at the **predesign** stage to ensure costing and design for crossing structures is evaluated. | Noted. |
| 54 | While undertaking geotechnical investigation borings, laboratory testing and analyses may be deferred to detailed design to finalize design and construction recommendations. However, at a minimum a desktop geotechnical/hydrogeological analysis should be undertaken utilizing existing boreholes and monitoring wells in the area. This should be conducted at the outset of **detailed design** for all project areas. | Noted. |
| 55 | As part of the desktop geotechnical/hydrogeological analysis, water table elevations (including seasonal fluctuations), groundwater flow direction, groundwater quality, nearby receiving surface waters (wetlands, watercourses, or other significant features), etc. should be described, so that potential changes to water table elevation, groundwater flow direction, reduction to baseflow, impacts on water quality, etc. can be evaluated especially in areas such as where infrastructure is proposed in or adjacent to wetland properties. This should be conducted at the outset of **detailed design** for all project areas. | Noted. |
| 56 | The draft ESR does not clearly identify how maintenance of recharge and maintenance of ground water quality will be achieved. Please be advised that the subject property appears to fall within a Highly Vulnerable Aquifer under the Credit Valley-Toronto & Region-Central Lake Ontario Source Protection Plan (CTC SPP). TRCA supports the legislated protection of municipal drinking water sources through the Clean Water Act and acts as a technical advisor to municipalities in their role for implementing some aspects of the CTC SPP. For more information please visit http://www.ctcswp.ca/. This should be | In accordance with the Clean Water Act, the ESR examined source water protection in Section 3.2.2 and concluded as follows:<br>*In the Seaton community, the area of Duffin's Creek, identified as Intake Protection Zone 3 for the Ajax water treatment plant, is located south of the existing gas* |

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| | addressed at the outset of **detailed design** for all project areas. | *pipeline on the southern border of the Seaton community (south of Taunton Road). Also, potential spill scenarios for the Ajax plant are along Duffin's Creek and south of the Seaton border. As a result, no portion of the Seaton community is located in an area requiring protection per the Source Water Protection Plan. No development or City roads will be constructed within Intake Protection Zone 3.*<br><br>MESPA Chapter B Sections B2.3, B4 and B11.3 addressed the water resources studies undertaken in an iterative, integrated manner by the multidisciplinary MESP study team to ensure that inter-relationships that exist between surface water, groundwater, receiving wetlands and watercourses, aquifers and other NHS features were identified and appropriate mitigative measures were recommended based on an understand of the interrelationships, and identifying potential implications to various components of the NHS and make recommendations regarding mitigative measures to protect the NHS over the long term. (MESPA, page B-2)<br><br>Classification of *Highly Vulnerable Aquifers,* under the Credit Valley-Toronto & Region-Central Lake Ontario Source Protection Plan, was undertaken subsequent to the completion of the MESPA. We acknowledge that portions of the Study Area may be within an HVA. The presence of an HVA and its potential to be impacted the subject road construction will be reviewed and updated at **pre-design**. |
| 57 | Infrastructure construction below the water table should involve the use of cut-off collars or clay plugs to provide barriers to flow to prevent groundwater movement along granular bedding and erosion of the backfilled material. This should be conducted at the outset of **detailed design** for all project areas. | Noted to be addressed at **detailed design**. |
| 58 | Please consider Appendix C: Water Balance and Recharge of TRCA's Stormwater Management Criteria when designing LIDs (http://sustainabletechnologies.ca/wp/wp-content/uploads/2013/01/SWM-Criteria-2012.pdf). TRCA staff further requires a plan view and a cross section complete with borehole / monitoring wells schematic of layout for LIDs at this time to evaluate the feasibility of implementing the | Noted to be addressed at **detailed design**. |

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| | proposed LIDS. Please also consider potential adverse impacts of infiltrating water potentially affected by road salting especially in relation to source water protection considerations. This should be conducted at the outset of **detailed design** for all project areas. | |
| 59 | The borehole logs should provide geodetic information and static groundwater elevations. In order to evaluate groundwater conditions relative to the proposed infrastructure construction, especially when reviewing the proposed profiles / cross-sections, TRCA staff recommends that the groundwater elevations be included on the profiles for analysis at the **detailed design** stage. | Noted to be addressed at **detailed design**. |
| **Geotechnical (Detailed Design Comments)** | | |
| 60 | A detailed geotechnical study is required in support of the proposed undertaking to assess the ground conditions along the alignments and to provide the geotechnical design recommendations for the various components of the proposed undertaking. | Noted to be addressed at **pre-design**. |
| 61 | Where valley slopes exist, a slope stability and erosion hazard assessment is required to ensure that the proposed work is not undermined by an erosion hazard in the long-term or does not destabilize the valleys. The position of the Long-Term Stable Top of Slope needs to be delineated with a minimum safety factor of 1.50 to define the setback required from the existing top of bank/slope. Please provide. | Noted to be addressed at **pre-design**. |
| 62 | Where any stabilization is required due to active erosion in the valleys, the stabilization should be designed by geotechnical engineer to ensure that a minimum safety factor of 1.50 is met after stabilization. Please provide. | Noted to be addressed at **pre-design**. |
| 63 | Any retaining walls, abutments and wing walls should be designed by a qualified engineer using geotechnical information. The global stability should also be checked for the walls to confirm that a minimum safety factor of 1.50 is met against global instability. Please provide as part of the design plans for review. | Noted to be addressed at **pre-design**. |
| 64 | The culverts should be designed by a qualified engineer using relevant geotechnical information. Suitable foundations are required for the culverts as per the ground conditions. Please provide as part of the design plans for review. | Noted to be addressed at **pre-design**. |
| 65 | Cross-sections should be provided along the alignments in adequate intervals, which shows the proposed grade with respect to the existing ground. Cross-sections should be extended enough to show all the features and slopes/banks where existing. The extent of the proposed grading should also be shown along the alignment. | Noted to be addressed at **pre-design**. |
| 66 | Any proposed embankments should be studied and designed by geotechnical engineer. A stability assessment is required for the embankments to ensure that a minimum safety factor of 1.50 is achieved. | Noted to be addressed at **pre-design**. |
| 67 | Any proposed cuts should be studied by geotechnical engineer. A stability assessment is required to confirm that the proposed side slopes for the cuts satisfies a minimum safety factor of 1.50. | Noted to be addressed at **pre-design**. |
| 68 | All engineering drawings for any retaining walls, abutments and wing walls, culverts, stabilization works, embankments and cuts should be prepared showing all necessary details and specifications and | Noted to be addressed at **pre-design**. |

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| | submitted as signed and sealed by Licensed Professional Engineer. | |
| 69 | Where the work is in proximity to steep slopes and valleys, the construction methodology and sequencing should be presented to ensure that the surrounding ground/slope is not adversely impacted during the construction. | Noted to be addressed at **pre-design**. |
| 70 | Where work requires construction access into the steep slopes and valleys, the cross-sections and profile should be presented for the access. A slope stability assessment is required to study the cross-sections (cuts and fills) and to confirm that slope stability is met. The slope stability analyses should also account for the heavy machinery/equipment loads and vibrations. | Noted to be addressed at **pre-design**. |
| 71 | If the construction results in alterations and disturbance into slopes and valleys, stabilization is required to be reviewed by the geotechnical engineer. Given the slope geometry and the extent of the alterations, the stabilization may require to be engineered (e.g. engineering structures) to ensure that the stabilization remains stable in long-term with a minimum safety factor of 1.50. Further, all necessary engineering details, cross-sections should be prepared by geotechnical engineer and submitted as signed and sealed by Licensed Professional Engineer | Noted to be addressed at **pre-design**. |
| 72 | Where any trenchless installation for infrastructure below the watercourse is required (utility, water, wastewater relocations/work), the pertinent geotechnical studies should be conducted to provide the required site characterization. The trenchless installation should be designed by specialty consultant or contractor using the geotechnical information and recommendations. The adequate cover from the bottom of the watercourse should be determined as per the design. The cross-sections and site plan showing the alignment and entry and exit pits/shafts and the cover from the bottom of the watercourse and other infrastructures should be also submitted in support of the proposed undertaking. The design should also ensure that the proposed trenchless installation does not cause the inadvertent return of drilling fluid (frac-out) or excess settlement on the ground along the alignment. Further, the shafts or pits required for the proposed trenchless installation should be properly stabilized by the means of shoring or other techniques. The details of such stabilization should be also prepared by qualified engineer and submitted as signed and sealed be Licensed Professional Engineer. | Noted to be addressed at **pre-design**. |
| **General Comments on the Draft ESR** | | |
| 73 | Section 1.1.5 indicates that the third NFSSR submission was used for the purposes of the ESR. It was noted at several of our meetings and in email correspondence that we will not be reviewing the submission against the NFSSR documents as they were never approved by the TRCA or City, as identified to the landowners during the OMB process. The NFSSR's should only have been used as a starting point on which further analysis should have been undertaken to inform decisions made in this ESR. | Noted. |
| 74 | The costing provided for each road in Section 1.2 may change based on the requirements noted in this letter and related studies which have yet to be completed. It is imperative that the City/developers | The capital costs provided in Section 1.2 were created for the purpose of categorizing the City roads in accordance with |

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| | groups note this as part of their budgeting process as these studies should have been completed as part of the ESR, but have been deferred to the design stage. It should also be clarified that costing at this time is unknown, particularly at the crossing locations within the NHS as these studies have not been completed. | requirements of the Municipal Class EA. The initial Class EA designation (i.e., Schedule C) remains regardless of changes to the cost of the road construction.<br><br>The costs provided in Section 1.2 of the ESR were not prepared, nor are they anticipated, to be used for construction costing purposes. |
| 75 | Tables 3.1 and 4.3: The Data Gap Analysis table and Summary of Evaluation Criteria table appears to be missing stormwater, hydraulics, flooding and fluvial geomorphology. This will need to be assessed fully in the next phase of work. | Table 3.1 lists the topic areas that we examined for data gaps before undertaking the Alternative Design Concepts evaluation. Table 4.3 lists the evaluation criteria used to assess the various Alternative Design Concepts. |
| 76 | Table 3.6 references a HADD under the Fisheries section. This section does not reflect the current Fisheries Act. Designs will need to re-examine impacts in relation to this legislation to ensure it is both current and relevant. | Table 3.6 provides the original MESPA Design Considerations as reviewed and approved in 2013 by all relevant parties including TRCA, City and the Seaton Landowners' Group. Where legislation or regulations have been updated since the publication in the MESPA, these topics will be reviewed and appropriate responses provided in detailed design.<br><br>As noted in Section 6.2.4.2, TRCA Consultation, the proposed TRCA-City protocol will address the matter of "*new or emerging legislation, regulations or guidelines may affect design requirements, final construction details, restoration/compensation and anticipated costing to construct the roads, crossing structures (bridges/culverts) and other associated infrastructure. TRCA may also update its pre-design brief."*<br>. |
| 77 | Section 6, Pg 4-13, TRCA Policies: The detailed designs will need to meet our policies for infrastructure for not only the section mentioned, but all pertinent sections including those that deal with recreational uses (trails), stormwater and natural features for instance. Please refer to TRCA's The Living City Policies for all relevant sections including but not limited to 7.4.1.1 (Stormwater Management), 7.4.1.2 (Source Water Protection), 7.4.2.1 (Natural Features and Areas Management Policies), 7.4.3 (Natural Hazard Management) and 7.4.4.1 (General Policies for Infrastructure) for example. | Noted. All relevant TRCA policies will be addressed at **detailed design**. |
| 78 | Section 4.5 notes that the ESR does not identify and consider multiple design concepts as would normally be done in a Phase 3 and 4 ESR, but that the design concepts evolved through discussions with the City and Region. Review of the options was difficult to follow as Table 4.4 did not show how the | Section 4.5 presents an accurate summary of the consideration of Alternative Design Concepts carried out for this study. The MESPA, 2014 confirmed the location of the recommended City |

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| | recommended alternative was chosen based on evaluation of all socio-economic and environmental impacts. We also typically see an evaluation of each option including information on how those options will impact the NHS (watercourses, wetlands), flood plain, etc. It is unclear if this has been done. Please advise how this will be addressed when responding to this letter. | roads based on the CPDP, 2006 which established these roads and the Seaton community.). This Class EA Study, building on the MESPA (Phases 1-2 of the Class EA planning process examined Alternative Design Concepts per Phases 3-4 of the Class EA process. The Seaton community is exceptional in that it was planned and established by the Ontario government using the Ontario Planning and Development Act (i.e., not the Ontario Planning Act) which gives the government the broadest possible powers to enshrine land uses.<br><br>This Class EA Study considered a range of Alternative Design Concepts which focused on designing the City roads to address the City and Regional transportation comments. These design alternatives used the same right of way within the NHS and thus did not alter the potential for the roads to impact the NHS. |
| 79 | Page 4-27: It is noted that four lanes cannot be accommodated at the majority of the intersections as a result of property constraints identified in existing draft plans. Is it the City's intention to keep these roads as two lanes in perpetuity? | The recommended design concepts illustrated in Section 5, include a single through lane in each direction plus left-turn, right-turn, and bicycle lanes where required. The design is based on a comprehensive review process with the City of Pickering and is intended to meet the transportation objectives of the City as Seaton develops. The City of Pickering has requested long-term flexibility to restripe the pavement over time as they see fit and the proposed pavement widths provide them with the flexibility they require to do so. |
| 80 | Page 6-19, Agency Meeting #4: If the ESR will be filed prior to this meeting date then please remove from the ESR or revise the paragraph accordingly. We trust this has been updated in the final ESR. | Done. |
| 81 | Please ensure all TRCA correspondence is included in the ESR and available as part of the record for future reference at the pre-design/design stages. Table 6.5 is missing some of the edits to the minutes. Comments provided at the May 1, 2015 meeting and on the March 6, 2017 meeting have also not been fully incorporated into the table. In addition, Appendix 6, Meeting Minutes of March 6, 2017, please ensure the TRCA email correspondence sent March 27, 2017 regarding comments on the minutes is included. Other email correspondence, for instance, Steve Heuchert's email of May 21, 2015 regarding the status of the NFSSR documents cannot be located in the EA. Please advise when responding to this letter. | 1. Table 6.5 is a summary of the meetings only; all meeting notes for May 1, 2015 and March 6, 2017 meetings and related correspondence are found in Appendix 3.<br>2. TRCA email correspondence sent March 27, 2017 and June 8, 2015 were unintentionally left out of the draft ESR. They are now included in Appendix 6 of the final ESR.<br>3. A copy of Steve Heuchert's email of May 21, 2015 regarding the status of the NFSSR documents is attached to this response. |

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| 82 | Section 7.2 of the ESR notes that "Upon completion of this study and upon compliance with the MEDEI Public Work Class EA parcels required for NHS crossings by the subject roads will be transferred to the municipality", and that "This study demonstrates compliance with the MEDEI Public Work Class EA (Public Work Class EA) for disposition of lands…". Please note that as per the comments above, it remains unclear as to how much land is required to be transferred as there is a substantial amount of work that still needs to be completed which may impact land requirements. | Noted. Mitigation measure #22, Section 8 states, *Upon completion of the **detailed designs**, NHS lands required for City roads will be surveyed and reference plans will be prepared to provide for the required land transfers (i.e., fee simple or easements for construction works) to the City of Pickering. This will ensure that the transfer of Provincially-owned lands required for the construction of the City roads complies with the Ministry of Infrastructure Public Work Class EA.* |
| 83 | Section 8.3 Approvals and Permits, Toronto and Region Conservation Authority (TRCA) – Please note that work within any TRCA regulated area including wetlands and valleys will also require permits. In addition, permits will need to address and meet our requirements for the five (5) tests under the Conservation Authorities Act for flooding, erosion, dynamic beaches, pollution and conservation of lands. | Noted. To be addressed in **detailed design**. |
| 84 | On page 8-5, the Migratory Bird Convention Act is discussed. Sections 10 and 12 provide different dates for when tree removals should be avoided. Please note that tree clearing should occur between September and March, however, additional restrictions on the timing of removals may be needed to protect endangered bat species. The final timing window will be determined at the detailed design stage based on the relevant legislation, guidelines and mitigation measures. Please note that if grading, including grubbing, is undertaken in conjunction with tree removals, then a permit from TRCA is required for works in regulated areas. | *The Migratory Bird Convention Act, 1994*, is discussed on page 8-6. The tree cutting windows for endangered bats (item #10) and migratory birds (item #11, 12 and 13) will be coordinated during detailed design and implementation in order to acknowledge and protect all identified species.<br><br>To be addressed in **detailed design**. |
| 85 | It would appear that watercourse realignments will be required as a part of this work. As this analysis has not been completed at this stage, more in depth analysis will be required in the next phase of work. TRCA should be contacted at the pre-design stage to ensure appropriate studies are completed as there may be budget impacts and as such the structures proposed in this ESR should not be used for costing purposes. | Noted that if watercourse realignments are required additional analysis will be required in **pre-design**. |
| 86 | The gap analysis appears to be missing a few key components. In addition, to identifying the gaps, the ESR should have addressed some of this missing information in the form of studies to provide a clearer move forward approach for the design stage. As it stands, this work is deferred to the design team. Refer to the comments provided above and all items in the EA deferred to the design stage. Again this may result in significant changes to infrastructure costing. As such, crossings should not be determined using the information in the ESR, but should be deferred to the pre-design stage and detailed design stages once appropriate studies have been completed and a 30% design prepared and approved in principle by TRCA. | Noted. |
| 87 | Several of the figures in the ESR are too small to be legible (e.g., Figures 4.2 and 4.3) Please ensure future figures provided to support and guide functional design assessments are legible. | All figures were also provided to TRCA (and available to all parties) in digital form to enable a variety of scales of viewing. In |

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| | | addition, the Class EA Study and its Appendices are available on the City of Pickering website at: https://www.pickering.ca/en/city-hall/SeatonRoadsClassEAStudy.aspx |
| 88 | Site visits will be required in the next phase of work for all crossings within the NHS. It is recommended that these site visits occur at the outset of the pre-design stage or prior to commencement of detailed design and used to confirm study requirements. | Noted. To be addressed in **pre-design**. |