

**220 Arkell Road, Guelph, Draft Plan of Subdivision Submission
D.P. 23T-19002, ZBA OZS19-017**

Tuesday, March 28, 2023

Responses to First Submission Comments received from:

#	C/R	Comment / Response
City of Guelph - First Submission, Comments dated November 10, 2020 from Leah Lefler Planning and Building Services		
Environmental planning staff offer the following comments, based on the review of the following documents that pertain to the proposed Draft Plan of Subdivision and Zoning By-law Amendment application at 220 Arkell Road:		
<ul style="list-style-type: none"> • Planning Justification Report (BSRD, December 2019); • Preliminary Servicing, Grading and Stormwater Management Report (Stantec, May 28, 2019); • Hydrogeological Assessment (Stantec, May 28, 2019); • Geotechnical Report (Stantec, June 11, 2019); • Environmental Impact Study (Stantec, August 28, 2019); and • Tree Preservation Plan (Stantec, May 28, 2019). 		
<u>Environmental Impact Study</u>		
Assessment of natural heritage features and functions		
1.0	C	On March 13, 2017, Environmental Planning staff provided the following direction on how to address the small wetland pocket located to the east of the laneway: "AL pointed to the various wetland policies including: GRCA, as well as Other and Local in OPA42 and possible complexing with the PSW under Ministry of Natural Resources and Forestry policy. It was recommended that we deal with the GRCA on the small wetland piece and that the proposed detailed vegetation inventory would be required to confirm if any significant species were present in its assessment". Under section 4.2.1 on page 4.2, please note that Grand River Conservation Authority (GRCA) mapping has been updated to exclude the wetland pocket located to the east of the laneway. A portion of that wetland appears to have been filled in to accommodate grading of the approved Arkell Meadows Subdivision. Please clarify if significant species were found in the small wetland pocket.
	R	The field notes regarding the wetland pocket, which was a swamp thicket inclusion, were included in Appendix G - Field Notes of the EIS Report. The notes are contained on the second last page of the ELC field notes. No significant species were found in the small wetland pocket.
2.0	C	Section 4.4.2.4 Wetland Delineation refers to the wetland boundary determined in the field with GRCA on June 6, 2017; however, Figure 4 also references a Natural Resource Solutions Inc. (NRSI) wetland boundary flagged on the property to the south. The 30m buffer shown on the PSW on Figure 4 should extend to the NRSI flagged wetland boundary to accurately reflect the extent of natural heritage system on the subject property. Please update both the text and the mapping accordingly.
	R	The 30 m buffer to the wetland has been shown on Figure 4 where it occurs on the subject property, the buffer continues to the edge of the subject property boundary coincident with the existing driveway.
3.0	C	Under Section 5.1 Wetlands, please note that the wetland boundary is identified based on guidance from the provincial government (Ontario Wetland Evaluation System), and not the Ecological Land Classification system. Furthermore, where Locally Significant Wetland is contiguous with Provincially Significant Wetland, Locally Significant Wetland are considered part of the Provincially Significant Wetland, and therefore the minimum buffer applied should be 30m.
	R	Noted. The wetland boundary determined with the GRCA on both the subject property and property to the South has been provided on Figure 4 with a 30 m buffer shown on the subject property.
4.0	C	A detailed characterization of the current hydrology of the wetland (e.g. depth to groundwater, depth of surface water, extent and duration of flooding) should be included in a revised EIS.

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	R	Stantec staff visited the onsite Torrance Creek Swamp PSW in April 2022 to characterize existing surface water ponding conditions in the PSW, with a photolog shown in Appendix E of the EIS Addendum. Stantec proceeded to install a transect of three drive-point piezometers in the portion of the PSW located downgradient of the proposed outlet of the future stormwater management facility (SWMF) (see Figure 1, Appendix D of the EIS). The purpose of the drive-point piezometers is to track the pre-construction and post-construction hydroperiod of the PSW to assist in evaluating whether post-development stormwater discharge to the PSW could affect the long-term form and function of the PSW ecosystem. The drive-point piezometers are equipped with data loggers, which have been collecting groundwater and surface water levels in the PSW at these locations since May 2022 (see hydrographs presented in Figure 5, Appendix D of the EIS). A feature-based water balance is also included in Appendix D of the EIS that provides a preliminary analysis of anticipated ponding depths in the PSW from the proposed development under the post-construction condition (only short-term ponding of 0.005 m (5 cm) is estimated to occur in the PSW from post-development runoff entering the PSW during the greatest period monthly runoff surplus generated from the proposed development).
5.0	C	Pre-consultation comments indicated that there are hedgerows on site which need to be considered under the City's woodland and/or urban forest policies. If the hedgerows do not meet the criteria for designation as significant or cultural woodlands, which are premised on the definition of woodland, consistent with the Official Plan, identify opportunities for protection, enhancement and restoration of trees within the Urban Forest. Demonstrate where preservation is not possible through describing the iterative process between the design team and providing examples of site designs that were not pursued and a rationale as to why not. This analysis should draw on Table 4.10.1 of the Torrance Creek Subwatershed Study, specifically, Hedgerow 32 (Ecological Linkage), Hedgerow 33 (south property line adjacent Arkell Meadows) and Hedgerow 34 (east hedgerow), and should be included in a revised EIS.
	R	A new section was added to the Addendum that provided an analysis of significance of the hedgerows present on the subject property. It included the incorporation of Table 4.10.1 from the Torrance Creek Subwatershed Study as well as consideration of Dougan and Associates (2009), the City of Guelph Official Plan, and Stantec survey results. With respect to an iterative process, extensive consultation with City of Guelph staff, including minuted meetings, where various versions of the concept plan was presented and discussed. Including, but not limited to: <ul style="list-style-type: none"> -Pre-consultation Meeting on October 5, 2016 -Consultation meeting with Adele Labbe and Chris DeVriendt on March 13, 2017 (minutes provided on March 16, 2017) -Planning meeting on October 10, 2017 with Katie Nasswetter, Jim Hall, Chris DeBriendt, Jyoti Pathak, Mary Angelo (minutes drafted, not finalized) -Meeting on September 10, 2018 with Mary Angelo, Katie Nasswetter, Jim Hall, Jyoti Pathak, Leah Lefler Pre-Con(meeting minutes available) -Ongoing consultation with City of Guelph through design iterations via email (e.g., road location in the ecological linkage, November 11, 2016) -Comment review between Melissa Straus and Leah Lefler on July 26, 2021 (minutes in Appendix B3) -Water balance and impacts discussed on October 27, 2021 (minutes in Appendix B3) -Additional water balance discussion on January 7, 2022 (minutes in Appendix B3)
6.0	C	The EIS says that the woodland limit was determined in the field with the City of Guelph on September 7, 2017. Please include documentation of this site visit in a revised EIS.
	R	The woodland limit was determined during a joint field site walk involving Janice Ball of Stantec and Adele Labbe of the City on September 7, 2017. As this was a woodland limits flagging exercise, minutes were not typically taken and as such documentation is not available.
7.0	C	Section 4.4.2.1, references three main areas: (1) eastern edge of the significant woodland/PSW; (2) northern hedgerow; and (3) eastern edge. Please include a map that illustrates where each of these areas are located. There appear to be four hedgerows in addition to the significant woodland/PSW boundary: northwest boundary (adjacent Victoria Park Village subdivision); northeast boundary (adjacent agricultural lands); southeast boundary (adjacent Arkell Meadows subdivision); and central hedgerow running northwest to southeast through the property.
	R	The eastern edge of the Significant Woodland/PSW refers to the area along the west side of the proposed development. The northern hedgerow refers to the Ecological Linkage along the north property line. The eastern edge refers to the hedgerow along the east property boundary. To provide clarity, the hedgerows have been labelled on Figure 3 using the Torrance Creek Subwatershed Study as a guide with additional descriptions provided in the new section on hedgerows.

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8.0	C	Approximately a third of the site (2.47 ha) drains to the woodland on the adjacent property to the east. The EIS should assess if the change in drainage may impact the adjacent woodland.
	R	The offsite woodlot to the east was included in the updated feature-based water balance found in the EIS Addendum Appendix D. The detailed infiltration deficit (2,576 m3/yr) and run off deficit (2,481 m3/yr) were discussed during the October 27, 2021 water balance meeting and determined to be generally in alignment with City expectations in change magnitude (see Appendix B3). The EIS Addendum has been updated to include a section on this woodlot and demonstrates no negative impacts.
9.0	C	Section 4.4.3.3 Corridor Studies does not describe the study design. For example, were pitfall traps installed along drift fencing? Please clarify.
	R	In the original EIS, Section 3.2.3.3 Corridor Studies (within Section 3.0 Data Collection Methods) described the approach to pitfall trap studies. Including: "The pitfall trap study consisted of two sections of buried silt fencing and 18 buckets (9 on either side) sunk into the ground approximately every 20 m. Fencing and buckets were installed on August 10, 2017 at the locations shown on Figure 3 (Appendix A)."
10.0	C	Section 4.4.3.4 Bat Maternity Roost states that bat exit surveys were not conducted in 2017, and would be conducted the summer prior to tree removal. This approach appears to assume that bat habitat could be removed, if detected at a later date. Please confirm with the Ministry of Environment, Conservation and Parks that this approach is acceptable, and include correspondence in an updated EIS.
	R	Consultation through the submission of an Information Gathering Form (IGF) was undertaken with the Ministry of Environment, Conservation and Parks (MECP). The MECP endorsed Stantec's proposed protocol in which impacts are avoided through the use of tree removal timing windows (i.e., no cutting of these trees between April 1 and September 30) for the identified candidate bat roost trees located within the project footprint. Exit surveys will occur at the structures on the property (residence, garage, barn) and additional consultation with MECP will be undertaken, as required. MECP consultation can be found in the EIS Addendum Appendix B4.
11.0	C	Section 4.4.3.5 Breeding Birds refers to Barn Swallow surveys and the fact that no evidence of Barn Swallow nesting was noted within the study area. Please note that the General Habitat Description for Barn Swallow refers to three categories of habitat: (1) nest; (2) the area within 5m of nest; and (3) the area between 5 m and 200 m of nest. Please clarify whether or not any category of Barn Swallow habitat is present within the study area.
	R	No evidence of nesting by Barn Swallows was found on the subject property or Study Area where access permitted. It is unknown, due to a lack of access, if nesting Barn Swallows occurred within 200 m of the subject property; however, Barn Swallows were reassessed by COSSARO in 2021 and their status was changed from Threatened to Special Concern on January 25, 2023. Therefore, the General Habitat Description for the species (under the ESA) does not apply. Barn Swallows have instead been considered under SOCC and/or locally significant in the Addendum.
12.0	C	Section 4.4.3.5, Crepuscular Surveys, states that surveys were completed on June 21, 2017; however, Table 3-11 indicates that surveys were completed on June 12, 2017. Please clarify. Table 3-11 indicates 100% cloud cover on June 12, 2017. Established protocols for surveying crepuscular birds indicate that surveys should be conducted under clear conditions.
	R	The Crepuscular Surveys were conducted on June 7 and June 12, 2017. June 21s is a typographical error. Although we tried to complete surveys during appropriate weather conditions, this was not always possible. As the first visit documented the presence of crepuscular species, cloud cover during the second visit did not impact the overall detectability of crepuscular species in the Study Area.
13.0	C	Under Section 5.5.2 Rare or Specialized Habitat, please confirm whether or not Candidate Significant Wildlife Habitat for area-sensitive breeding birds is present in the Torrance Creek PSW. Conclusions drawn in the sixth paragraph on page 5.4 are unclear and inconclusive.
	R	As noted in Section 5.5.2, SWH for area-sensitive breeding birds was identified in the Torrance Creek Swamp PSW by previous studies, as identified by the City in their May 10, 2017 correspondence. Results of studies conducted by Stantec in 2017 did not detect any area-sensitive breeding species; however, field studies were restricted to the woodlot edge due to a lack of access to off-property areas. Therefore SWH was documented in the PSW by others, not Stantec, but was still considered present. A summary of SWH identified on the subject property and/or Study Area is included in the Addendum.

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14.0	C	Please clarify if Section 5.5.5 Locally Significant Wildlife Habitat refers to Habitat for Significant Species (i.e., per Official Plan policy 4.1.4.4) or Significant Wildlife Habitat in the form of Habitat for Species of Conservation Concern (i.e., per MNRF's Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E). Text, as currently written, is unclear
	R	Section 5.5.5 Locally Significant Wildlife Habitat referred to significant to the local Guelph area. Species of Conservation Concern, as per MNRF's guidance, were discussed in Section 5.5.3, Species of Conservation Concern. Additional analysis on locally significant wildlife is also provided in the Addendum.
15.0	C	Section 5.7 Significant Natural Heritage Features Summary describes the hedgerows and habitat for locally significant species as non-significant. Please include the rationale and supporting analyses for why these features are considered non-significant. For example, is Habitat for Significant Species present, based on the criteria of the Official Plan? If yes, these areas are considered part of the Natural Heritage System as Natural Areas. This section appears to focus on the PPS; however, the OP is equally relevant.
	R	Per Comment Response #5, a new section on hedgerows was included in the EIS Addendum that includes an analysis of significance. Similarly a new section on locally significant wildlife was also included in the EIS Addendum to determine status of significance. Criteria set out in the Official Plan were included in the analysis.
16.0	C	Please update the EIS to clearly indicate that Significant Wildlife Habitat for Area-sensitive Breeding Birds is present within the study area and map extent of SWH on Figure 4. The EIS should provide a description of the habitat and the guild of birds that it supports.
	R	SWH for Area-sensitive Breeding Birds would be associated with the Torrance Creek PSW, which will not be altered by the proposed development. Shading has been provided on Figure 4 to show SWH in relation to this feature; however, it should be noted that it will be protected by retention and provided appropriate buffers.
17.0	C	Please update Figure 4 to show the extent of Deer Wintering Area SWH.
	R	The deer wintering area is associated with the PSW to the west of the subject property and has been shaded/hatched to illustrate SWH. This is coincident with the requested illustration of Area-sensitive Breeding Birds.
18.0	C	Please assess the function of the Ecological Linkage and other hedgerows with respect to amphibian movement and the Criteria Schedules for SWH in Ecoregion 6E. If any of the hedgerows meet the criteria, they would be mapped SWH and protected as part of the natural heritage system.
	R	As per the March 13, 2017, meeting with City staff, an analysis of the function of the ecological linkage was not required as the OP has already determined that the linkage was significant. The goal of the movement corridor studies (i.e., pit falls) was to determine what species are using the subject property to inform the wildlife crossings within the linkage. Furthermore, significant wildlife habitat for amphibians is absent from the Study Area based on the results of the field program and therefore per the Ecoregion Criteria movement corridors are absent.
19.0	C	Call surveys did not detect Wood Frog; however, wildlife movement surveys did detect Wood Frog. The EIS should be updated to evaluate the presence of Woodland Amphibian Breeding Habitat SWH within the study area. Further, if the wetland provides a woodland amphibian breeding function, the EIS should address how changes to wetland hydrology may impact this function.
	R	This is correct, however, a total of 8 wood frogs does not meet the Eco-region criteria of 20 individuals required to constitute significance. The EIS Addendum includes a summary of SWH identified within the Study Area, which does not include SWH for breeding amphibians.


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20.0	C	Page 10.2 "One plant species identified during studies is considered locally rare in the City of Guelph: Swamp Gooseberry (<i>Ribes hirtellum</i>)". Figure 4 maps the location of this species in the footprint of the proposed trail connection to the Victoria Park Village subdivision. The EIS does not address the Habitat for Significant Species policies (4.1.4.4) of the Official Plan. Please update the EIS to include this policy analysis and recommendations.
	R	In addition to its mention in Section 10.1 (page 10.2) of the original EIS, Swamp Gooseberry was mentioned in Section 5.7 Significant Natural Heritage Features Summary (habitat for locally significant species), and also in Section 7.1.4 Locally Significant Species. As noted in Section 7.1.4, "Swamp gooseberry was recorded within the northern hedgerow, which is to be protected as part of the ecological corridor. Impacts are restricted to accidental removal during invasive species management." Although the trail location is relatively fixed at this point, due to a required connection to the existing trail within the Victoria Park Village development to the north, a field fit may be possible to avoid this plant species. Alternatively, the plant could be transplanted closer to the PSW during construction.
Policy and Analysis		
21.0	C	Section 5.0 Significant Natural Heritage Features should address federal, provincial and municipal policy requirements (i.e. Fisheries Act, Endangered Species Act, 2020 Provincial Policy Statement and City of Guelph Official Plan March 2018 Consolidation). Please update accordingly.
	R	Section 2.0 Policy and Guidance Considerations includes a review of policies that were considered during the preparation of the EIS, including all of the mentioned documents, except for the Fisheries Act (which is not applicable to the subject property). While Section 5.0 does not specifically discuss each of these under conspicuous headings, discussion related to the various acts and policies is contained within the discussion under each of the headings specific to Provincial Policy Statement.
22.0	C	Section 5.3 Valleylands states that GRCA identifies Significant Valleylands. This statement is incorrect. The City's Official Plan establishes the criteria for identifying Significant Valleylands. Those established criteria rely on GRCA's regulatory floodplain mapping. Please clarify this in text.
	R	Noted.
23.0	C	The City of Guelph's Official Plan Natural Heritage System policy appears to be interpreted incorrectly in a number of areas. On page 8.1, the EIS states that development is not permitted within Significant Natural Areas, except in accordance with the general policies. This is incorrect. Uses in the Natural Heritage System are limited to the general permitted uses; the Natural Heritage system consists of Significant Natural Areas and Natural Areas, and buffers. Feature specific policies may further restrict or expand upon general permitted uses. In other words, development and/or site alteration is restricted in the Natural Heritage System to general permitted uses and feature species uses.
	R	Noted.
24.0	C	The EIS should evaluate the need for established buffer and/or justify the use of minimum buffers.
	R	As discussed in Section 7.3.1 the buffers to the significant woodland feature (10 m) and PSW (30 m) are consistent with the Official Plan. Additional discussion on why these buffers are considered adequate was provided in Section 7.3.1.
25.0	C	The EIS appears to assume that all permitted uses are a given. Please note that policy related to permitted uses within the natural heritage system are contingent on the demonstration of no negative impact.
	R	Noted.
26.0	C	Grading and the outlet associated with the stormwater management pond is not permitted within the inner 15 m buffer of the PSW. The development concept should be revised to reflect this requirement. Further, it must be demonstrated in the EIS that there will be no negative impacts to the natural heritage system.
	R	The design of the SWM and outlet configuration has been updated to remove impacts within the inner 15 m buffer of the PSW. This is demonstrated within the FSR Dwg C-410 complete with a cross-section of the outlet configuration to clarify review.

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27.0	C	Locate the trail outside the NHS to the extent possible. The trail is designed as a primary trail, which is not a permitted use within the natural heritage system (i.e., passive recreation, as in a low-impact nature trail, is a general permitted use).
	R	The proposed trail has been located outside of the PSW, significant woodlot, significant woodlot buffer, SWH but a portion does fall within the wetland buffer. We understand that the OP definition includes minimum buffers as part of the NHS although the trail has been located to the extent possible outside the NHS. While it is recognized that a portion of the trail falls within the wetland buffer, the buffer is functioning as intended by protecting the adjacent features. That said, the trail is in accordance with City of Guelph OP Schedule 6, coincident with the SWM infrastructure area to reduce the impact of adding an additional constructed footprint, and was somewhat predetermined such that a continuation of the existing/approved trail to the north is provided.
Ecological Linkage		
28.0	C	The EIS should address the Ecological Linkage policies of the Official Plan (Section 4.1.3.9). For example, the EIS must include an assessment of the Ecological Linkage to confirm the configuration (i.e., location and width) based on the scale at which it is intended to function, the nature of adjacent
	R	Please see the response to Comment 18.0 in which City Staff on March 13, 2017 did not require this analysis as the City has already determined the location and significance of the linkage.
29.0	C	Section 8.2.1 City of Guelph Official Plan of the EIS states that the road connection to the Victoria Park Village subdivision was approved. Two road connections are proposed, one on the subject property and one on the adjacent property to the east, and one primary trail connection (within the NHS). The EIS must demonstrate how the site design is compatible with the protection of the Ecological Linkage and its associated function. If it cannot be demonstrated, then a new site design must be prepared that meets the policy requirements.
	R	It is our understanding that the road connection between this development and the associated Victoria Park Village was approved. 220 Arkell was designed with this road pattern in mind. Consultation with City Staff on January 23, 2017 indicates that the connection through the ecological linkage would meet the definition of essential infrastructure, which is permitted in the policy, as long as justified through the application. Through the application (2017-present), this connection has been included as part of the site design iterative process presented to City staff as detailed in Comment #5.
30.0	C	The current development proposal includes two road crossings, a stormwater management facility, and a primary trail bisecting the Ecological Linkage. This is not supportable, as it is not consistent with the protection of Ecological Linkage functions such as wildlife movement. Consistency with Official Plan policy must be demonstrated. For example, stormwater management infrastructure may be permitted in Ecological Linkages subject to certain policy tests. As proposed, the SWM pond appears to reduce the width of the Ecological Linkage to less than 10 m wide. Further, the SWM pond appears to require fencing due to the proposed slopes. A portion of the primary trail also appears to require fencing due to proposed slopes within the Ecological Linkage. This is not compatible with deer movement.
	R	The development proposal includes only one road crossing associated with the subject property and a trail that will cross the Ecological Linkage. The road crossing has been sited to coincide with a road connection to Victoria Park Village, which was approved. The trail crossing is intended to connect with the existing/approved trail to the north. These design elements were previously discussed with City staff and it was understood that agreement was achieved. The stormwater pond will not bisect the Ecological Linkage, but arguably will add to its ecological diversity through appropriate design and planting. In effect, the SWM pond area will become part of the Ecological Linkage thus increasing its breadth. The sloping and shaping of the pond has been revised such that fencing is not required. Furthermore, provisioning of a wildlife culvert will also mitigate the impacts to the road crossing. A new section on the ecological corridor has been included in the EIS Addendum.
31.0	C	The proposed stormwater management pond is a dry pond with slopes that appear to require fencing around much of the perimeter, include its interface with the Ecological Linkage and natural heritage system. This essentially reduces the 50m buffer to less than 10m. The functionality of a 50m open corridor must be maintained. Therefore, a stormwater management facility with shallower slopes and no fencing that extends 10-15m into the linkage may continue to provide this function.
	R	The pond has been adjusted to no longer require fencing per the DEM guidelines.

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32.0	C	Section 7.3.3.3. Ecological Linkage and Wildlife Culvert of the EIS should note that the wildlife culvert is proposed to function as a drainage culvert and a wildlife culvert. This is unacceptable. The Ecological Linkage provides a connection for deer movement from the Torrance Creek PSW to east to the City, and also appears to have an amphibian movement function. Separate wildlife tunnels and funnel fencing are required to mitigate impacts associated with infrastructure crossing the Ecological Linkage. For example, if a road is proposed to cross the Ecological Linkage, mitigation measures to facilitate deer passage must be identified. Separate wildlife tunnels to facilitate safe passage of amphibians, reptiles and small mammals should be provided under each road crossing, and should include exclusion/funnel fencing. These mitigation measures are necessary to maintain the functionality of the linkage.
	R	Section 7.3.3.3 included recommendations for consideration during detailed design of the wildlife culvert (including funnel fencing) as well as signage and traffic calming recommendations for deer crossing. Section 5.3.2 of the EIS Addendum has added the requirement of the funnel fencing and provided an example wildlife culvert specification for consideration during preparation of the EIR. It is noted that the wildlife culvert will not jointly function as a drainage culvert.
33.0	C	The EIS should note that the landscape/restoration planting plan must consider plantings that provide appropriate moisture for herps, and cover for mammals to move through to maximize the quality of the linkage, to better facilitate animal movement through this corridor.
	R	The Landscape/Restoration Planting Plan will be developed to provide an appropriate mix of native species that will enhance vegetative cover and species diversity. This will be included as a recommended item in the EIR.
34.0	C	Two roads are proposed, one on the subject property and one on the adjacent property, and a separate primary trail. The two road crossings are supportable subject to the provision of appropriate mitigation measures outlined in comment 32 above. Options for incorporating the primary trail within the right of way of the westerly road crossing should be explored to reduce the number of crossings from three to two. The EIS must demonstrate that the proposed development is consistent with the Ecological Linkage policies of the Official Plan (i.e., no negative impact on deer movement). The EIS should provide high-level design details on how this would be accomplished.
	R	The trail location is consistent with OP Schedule 6 and upgrades to the trail were requested by Parks such that the trail meets City standards (3 m wide asphalt with 0.6m mow strips) and well as SWM access requirements. Therefore, downgrading to a secondary trail is not permissible. Extending the trail eastward to the road crossing creates a conflict with the fixed trail location on the VPV lands. This would require the developers of VPV to run the trail easterly through existing backyards or encroach into the north edge of the Ecological Linkage thus increasing the footprint of impact to the linkage area. Furthermore, the location of the SWM facility (and associated required access) would still be located within the linkage regardless of the trail. The proposed location is the best solution as it is consistent with previous trail planning, reduces the trail footprint within the ecological linkage (and NHS) and reduces an additional crossing by placing the trail coincident with the SWM facility. Mitigating impacts of the road crossing will also occur through the provisioning of a wildlife culvert. A new section has been added to the Addendum on the wildlife crossing.

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Stormwater Management		
35.0	C	Wetland water balance is a major outstanding component of the development application. The stormwater management outlet for the proposed development is a PSW, not a creek. The area drains to Torrance Creek, as in the site is located in the Torrance Creek subwatershed. Stormwater management must consider wetland water balance and hydroperiod. Demonstration of no negative impact to the PSW (feature) and ecological and hydrologic functions must be provided as part of the EIS. The water balance currently presented is a site-based water balance which predicts major increases in runoff and decreases in infiltration. The EIS must evaluate post- development wetland water balance relative to pre-development conditions. If you look at the wetland catchment pre to post-development, what are the results? How has the monthly wetland water balance changed? Where is the outlet? Are impacts to groundwater anticipated? What is the wetland/forest edge like in the vicinity of the outlet? How might it be impacted by the change in hydrology?
	R	As discussed in the Stantec (2022) <i>Revised Water Balance Calculations in Response to First Submission Comments Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario</i> , the annual pre- to post-development runoff volume directed to the Torrance Creek Swamp from the Site is projected to increase by 6,075 m ³ . The increase in post-development runoff discharged to the Torrance Creek Swamp is expected to raise surface water ponding within the wetland by no more than 0.005 m (5 mm) for a given month. This ponding is also expected to be temporary (i.e., not cumulative from month to month) as the Torrance Creek Swamp is identified to be a groundwater recharge feature (i.e., the runoff entering the wetland is expected to be infiltrated while present within this natural heritage feature). In addition, pre- to post-development infiltration volumes will be exceeded at the Site under the proposed post-development infiltration strategy (i.e., via proposed rooftop galleries and end of pipe infiltration) and, as such, reduction in groundwater inputs to Torrance Creek Swamp will not be impacted.
36.0	C	SWM design needs to consider back to back events. The system currently appears to be designed for the 10mm rainfall event.
	R	SWM design has been updated. Dry SWMF controls up to 100-yr event with infiltration throughout the site sized for the 25 mm event.
37.0	C	The SWM pond is proposed as a dry pond. It is located in the portion of the site where groundwater levels are the highest. Will the pond be lined with a clay liner? How will this be compatible with infiltration from the pond?
	R	The dry SWMF has been raised since the last submission. The dry portion facility is not proposed to be lined to promote passive infiltration. The wet forebay will likely require lining to prevent contaminants from entering GW as well as maintaining water within the forebay, but design and confirmation of this liner will be performed at detail design.
38.0	C	In section 6.1.4 Temporary Access of the EIS, please quantify and/or provide the detailed analysis to substantiate the following statement: "this increase was shown to not result in a significant change in the overall water balance or affect the function of the rear-yard infiltration trench". Please also clarify if this is referring to the rear-yard infiltration trench in the Arkell Meadows subdivision that is proposed to be relocated.
	R	Correct, the statement is referring to the rear yard infiltration trench in Arkell Subdivision. Please refer to the letter dated Nov. 5, 2018 responding to City July 2018 comments, included in Appendix D of the Preliminary Servicing Report for details.
39.0	C	In section 8.3 Grand River Conservation Authority of the EIS, it is concluded that a single culvert, that captures drainage from a fraction of the site, will maintain the recharge function of the wetland. Please provide the supporting analysis to demonstrate the accuracy of this statement.
	R	Note response to Comment #38 noted above.
40.0	C	The first bullet point on page 8.3 is incorrect. An infiltration deficit of 25% is anticipated, with infiltration-based LID measures incorporated into the design. A 74% increase in runoff is anticipated. What analysis has been completed to determine whether or not these surpluses are considered detrimental? Wetland water balance does not appear to have been completed. It was noted at the pre-consultation stage that "Wetland hydrology should be characterized and a wetland water balance prepared as part of a Hydrogeological Report to support the EIS". Please include this analysis in a revised EIS.
	R	Refer to response for Comment #35.

#	C/R	Comment / Response
41.0	C	The second paragraph on page 9.3 of the EIS does not appear to address issues related to the predicted infiltration deficit or runoff surplus, or the fact that the outlet is a PSW, not a watercourse. Swamps are adapted to adjust to seasonal fluctuations in groundwater and surface water conditions, based on a seasonal pattern (wet in spring, dry in summer). Impacts proposed by development must consider the natural range of variation. If development results in an increase in ponding of 10cm over an area over an extended period of time, you can expect trees to die off in that portion of swamp and convert to a shallow marsh or meadow marsh. This is the type of analysis we are looking for to determine whether or not the no negative impact test is being met. A shift from swamp to marsh would constitute a negative impact.
	R	In addition to the response provided above for Comment #35, to address the test of no negative impact, a sensitivity analysis, magnitude of impact, and risk analysis was completed based on guidance provided by the City of Guelph in their July 6, 2022 email (see Appendix B2) which included use of TRCA (2017). A new section is provided in the EIS Addendum.
Recommendations		
42.0	C	The EIS should include recommendations for best practices related to soil stock piles, especially for soils to be used in Ecological Linkages and Buffer Areas to best support restoration plantings and enhancement of the NHS.
	R	Note that the NHS and most of the Ecological Linkage area have been identified as no touch per preliminary grading plans, that said, wording regarding landscape restoration can be included in the EIR.
43.0	C	In section 7.3.5.3 Construction Timing of the EIS, note that nest searches must be completed every 48 hrs, not every 7 days. Further, Canadian Wildlife Service (Migratory Birds Act) does not recommend this approach in complex habitats. Please update text to reflect these points.
	R	Noted.
44.0	C	Recommended mitigation measures, such as wildlife tunnels and fencing, habitat enhancements, etc. should be outlined in the EIS.
	R	All mitigation measures related to habitat enhancements are discussed in Section 7.3.3 Restoration and Enhancement Measures, including wildlife culverts and fencing, discussed in Section 7.3.3.3 Ecological Linkage and Wildlife Culvert; however, additional details are included in the Addendum on the wildlife culvert.
45.0	C	The EIS should include a section on what the forthcoming EIR should address in greater detail (e.g. monitoring requirements including monitoring of wildlife tunnels, detailed planting plans, invasive species management plans, details on restoration of Ecological Linkage and buffer areas).
	R	Noted. Many of these recommendations have been discussed throughout the content of Section 7 and Section 9; however, a dedicated section has been provided in the EIS Addendum.
46.0	C	Note that the EIR should include a restoration plan for Block 20 once access has been converted to trail, and at minimum should reflect the planting plans approved through the Arkell Meadows subdivision.
	R	Noted. Included in the EIR recommendations section.
47.0	C	Dewatering requirements associated with the installation of servicing are not addressed in the EIS. The text should indicate that the EIR will address this component in greater detail when more information is available to complete the assessment. For example, where would the dewatering outlet to?
	R	Noted. The EIR will address the dewatering component in greater detail.

#	C/R	Comment / Response
Minor Comments		
48.0	C	The last sentence of the third paragraph under Introduction reads "(3) recommend appropriate measures to avoid or minimize potential negative impacts." This text should be revised to reflect that the policy test is no negative impact.
	R	Noted.
49.0	C	Under section 2.2.1 Official Plan, note that uses in the natural heritage system are limited to the general permitted uses, but may be further limited or expanded upon in feature specific policies.
	R	Noted.
50.0	C	Under section 2.2.3.1 Tree By-law, note that the tree by-law was created to regulate the destruction and injury of trees, not "prevent damage or destruction".
	R	Noted.
51.0	C	Table 3-2 should be relabeled: Tree Inventory Survey Date.
	R	Noted.
52.0	C	Under section 4.4.1 Geotechnical and Hydrogeological Conditions, it is stated that groundwater is positioned at ground surface at BH01-17 and BH02-17. Groundwater is positioned at ground surface at BH01-17 and BH03-17. Please revise.
	R	Noted.
53.0	C	Under section 4.4.1 Geotechnical and Hydrogeological Conditions, please clarify what is meant by the following statement: "Under the pre- development condition, the predicted annual volume of infiltration provided to the shallow groundwater system by this wetland area represents approximately 3% of the total annual volume of infiltration that occurs across the site."
	R	The 3% accounts for the total volume of infiltration occurring below the portion of the PSW that was previously present within the Site boundary: 
54.0	C	Section 4.4.3.1 Snake Surveys references the north-south hedgerow. It is unclear which hedgerow is being referred to here. Please clarify.
	R	Please refer to the responses to Comments #5 and 7 as well as the new hedgerow section 3.1 in the Addendum and Figure 3 which addresses this confusion.
55.0	C	Section 4.4.3.2 Amphibian Surveys refers to the temporary SWM facility on the adjacent property. Please note that the stormwater management pond is permanent. Also, this section references Figure 4; however, field study locations are illustrated on Figure 3.
	R	Noted.
56.0	C	Under Section 5.2 Woodlands, the text references two significant woodlands yet Figure 4 illustrates the boundary of only one significant woodland. Please update the map to include the significant woodland boundary and established buffer for the woodland located to the east of the property. An approximate boundary based on air photo interpretation is acceptable for this purpose.
	R	Noted. Figure 4 has been updated with an approximate significant woodland boundary for the woodlot to the northeast. A 10 m buffer has not been applied as the boundary has not been approved.

#	C/R	Comment / Response
57.0	C	Section 7.2.3 Trail, states (i.e. decreased or concentrate hydrologic input to adjacent wetland). What does this mean?
	R	This would refer to the potential for a trail to alter the hydrological pathways to an adjacent wetland, by either blocking flow to the wetland or acting like a dam and increasing the period of inundation.
58.0	C	Under section 7.3.3.1 Tree Preservation and Compensation, note that plantings should be designed for a specific function to enhance the NHS.
	R	Noted.

#	C/R	Comment / Response
59.0	C	8.4 Migratory Birds Convention Act describes the window as April 1 to August 25. Section 7.12 describes it as April 15 to August 9. Please revise.
	R	Noted. Section 7.12 was correct, April 15 - August 9.
Tree Preservation Plan		
60.0	C	Section 3.2.1, Trees to be Removed, of the Tree Preservation Plan states that "the development has been designed to maximize the development area which has resulted in minimal opportunity for tree preservation within the interior of the site". This is inconsistent with environmental planning staff direction during the finalization of the EIS terms of reference, where direction was given to assess the site based on the City's woodland and urban forest policies. Please demonstrate how the City's policies have been considered and addressed. Pre-consultation comments, on page 4 of 7, indicated that where preservation is not possible, demonstrate by describing the iterative process between the design team and providing examples of site designs that were not pursued and a rationale as to why not.
	R	This text has been removed from the Tree Preservation Plan. Additionally, the EIS Addendum, as well as the response to Comments #5, includes additional details on hedgerows, the iterative process and the Urban Forest Policy.
61.0	C	The tree protection zone should be based on the tree canopy width, per the City's Tree Technical Manual. Please clarify if this was the approach applied in the Tree Preservation Plan.
	R	Tree protection zones are based on the dripline estimation recorded in the field. The revised Report clarifies this.
62.0	C	Please update item 3 and 4 to refer to Planning 519-837-5616 (planning@guelph.ca) on drawing L-904: Tree Protection and Removal Notes.
	R	This has been updated.
63.0	C	On drawing L-905, there appears to be a discrepancy between the Tree Impact Totals summarized in Table 2 and the number of removals indicated in Table 1. Table 2 reports 154 trees removed and 98 trees retained, whereas when you count out the number of "removed" and "retained" trees listed in Table 1, the numbers appear to be 252 and 137 respectively. Please clarify.
	R	This has been clarified.
64.0	C	Please provide details pertaining to which trees require compensation and which trees do not require compensation to support the reported number of compensation trees required. This information is often incorporated into Tables 1 and 2.
	R	This information has been included in an updated chart.
Geotechnical Report		
65.0	C	Text on p. 2 indicates that monitoring wells were installed in all boreholes. This is inconsistent with information presented on drawing No.2. Please clarify.
	R	Correct, monitoring wells were installed in 3 of the 4 boreholes installed in 2017. Since this 2019 Geotechnical report an additional 6 monitoring wells were installed in 2022. This typo has no impact to the results presented.
66.0	C	The SWM pond is proposed where groundwater levels are the highest, yet the SWM facility proposed is an infiltration-based facility. Section 8.8.1 of the Geotechnical report states that the proposed bottom of pond elevation ranges from 333.0 to 333.5 m. Table 5-2 indicates that groundwater is at approximately 333.19 m in this area, and data from loggers indicates that 333.36 m is the high-water mark. Will the pond function as a dry pond or an infiltration-based pond? Please clarify how this pond is intended to be designed and function, and update the EIS to address the impacts associated with the refined/clarified design.
	R	The pond has been updated/raised with the dry cell elevation at 335.00 m and the forebay bottom at 334.00 m. The forebay will likely be lined to maintain a permanent pool and prevent contaminants from infiltrating, but this will be determined and designed at detail design.

#	C/R	Comment / Response
Hydrogeological Study		
67.0	C	Monthly Water Balance calculations have been completed based on 3 subcatchments (A, B, and C). Pre-development conditions are compared to post-development conditions within these catchments on a monthly basis. This analysis does not enable a comparison of pre- to post- development conditions as the site, under pre-development conditions, has a drainage divide, with approximately 2/3rds of drainage going to the wetland and 1/3 going to the woodland on the property to the east. To enable a proper assessment of impacts to wetland hydrology, compare post-development to pre-development conditions for the portion of the subject property located within the wetland's catchment. The analysis in Table 6 shows a 31% decrease (deficit of 4,908 m3/yr) and a 63% increase (increase of 16,300 m3/yr) based on a pre-development scenario that the entire site drains to the wetland when in fact it does not. This analysis should be completed and commented on in an updated EIS, including comparison of pre- to post- monthly differences.
	R	Please refer to revised water balance calculations presented in the Stantec (2022) <i>Revised Water Balance Calculations in Response to First Submission Comments, Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario</i>
68.0	C	The EIS should address whether or not the predicted reduction in infiltration would result in decrease base flow in Torrance Creek, or other potential negative impacts to the NHS.
	R	Please refer to revised water balance calculations presented in the Stantec (2022) <i>Revised Water Balance Calculations in Response to First Submission Comments, Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario</i> . Pre- to Post-development infiltration volumes will be exceeded at the Site under the proposed post-development infiltration strategy (i.e., via proposed rooftop galleries and end of pipe infiltration) and, as such, reduction in groundwater inputs to Torrance Creek Swamp will not be impacted. Note that all infiltration occurring across the site that reaches the groundwater table flows towards Torrance Creek Swamp.
Additional comments on Hydrogeological Study provided on behalf of Scott Cousins, City of Guelph Hydrogeologist		
69.0	C	Section 6.1 – In previous sections, the author has stated that 80% of the site will be impervious under post-development conditions, however this section now says 39%. Please clarify as to what specifically was meant on page 5.3 and how it differs from the statement made in Section 6.1.
	R	The 80% value is somewhat misleading and should be disregarded, with the total area (hectares) expected to become impervious cover under the post-development condition being reported instead. As shown in Table 6 (Appendix B), approximately 10% of Sub-Area B will be converted to impervious surfaces (0.22 of 2.31 ha), with 65% of Sub-Area C (2.60 of 4.01 ha) being converted to impervious surfaces. Sub-Area A will remain unchanged (i.e., no impervious cover). Overall, 2.82 ha of 7.16 ha (39% of Total Site Area) will be converted to impervious surfaces under the post-development condition. 2) Note that the pre- and post-development water balance analysis has notably changed from the calculations presented in the Stantec (2019) <i>Hydrogeological Assessment</i> report. Please refer to the Stantec (2022) <i>Revised Water Balance Calculations in Response to First Submission Comments, Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario</i> for the updated analysis.
70.0	C	Section 6.1 – The author suggests that LID stormwater management could be potentially available, yet later in the section identifies the key constraint (high groundwater table) to implementation of these measures. Has there been a suggestion to increase the site grade in order to achieve the 1m separation between the bottom of the proposed LID measures and the high groundwater table?
	R	LID stormwater management features have been considered and implemented where feasible and where separation from the high groundwater table is achieved. The site has been raised where possible to further support this strategy but is somewhat limited based on grading restrictions along the perimeter of the site including road tie in elevations at Hutchison Road at the northwest corner of the site, achieving a low point to convey majors to the SWM Facility (SWMF) while maximum the Park Block and trail slopes within acceptable tolerances, and raising back up to match the future extension of Pool Street along the west side of the Site. All this while maintaining similar drainage patterns from existing to proposed conditions and well as working towards an overall earth cut/fill balance. Through these restrictions, raising the site has allowed for implementation of rooftop infiltration galleries as well as an infiltration gallery in the SWMF while maintaining separation from the high groundwater table.

#	C/R	Comment / Response
71.0	C	The author discusses that the wetland is not a notable groundwater recharge area yet suggests water from site be directed to the wetland after treatment (post-development). Has the water balance accounted for the loss in recharge function of the wetland if it is required to be altered as suggested?
	R	<p>1) The wetland piece instrumented with the drive-point piezometer (i.e., DP1-17) (currently positioned in Sub-Area B) is to be removed post-development. In the statement that "water from site be directed to the wetland after treatment", Stantec is referring to the greater Torrance Creek Swamp located outside the western limits of the Site, which will not be disturbed post-development. The water balance calculations have accounted for the loss of groundwater recharge volumes for the entire Site, of which this wetland piece was included. The loss of groundwater recharge function provided by this wetland piece is expected to be replaced via the LID infiltration strategy implemented across the Site under the post-development condition.</p> <p>2) Note that the pre- and post-development water balance analysis has notably changed from the calculations presented in the Stantec (2019) <i>Hydrogeological Assessment</i> report. Please refer to the Stantec (2022) <i>Revised Water Balance Calculations in Response to First Submission Comments, Draft Plan Application - 220 Arkell Road, City of Guelph, Ontario</i> for the updated analysis.</p>
72.0	C	There has been no discussion provided as it relates to the hydrologic function of the wetland. One mini-piezometer nest has aided in the interpretation of downward gradients present onsite, however the author has not accounted for a water balance of the wetland itself. Please provide this water balance in order to inform whether the wetland has the capacity to convey the proposed direction of storm water to the wetland.
	R	Please refer to response Comment 71 response. The wetland piece discussed will be removed post-development and will not be receiving post-development surface water flows from the Site. Please also refer to Comment #53 response regarding the capability of the greater PSW to receive post-development runoff volumes from the Site.