County File: 15T-21005 & Town File: OPA-04-21 - 1st Submission Comments				
The Biglieri Group Ltd.		County File: 15T-21005 & Town File: OPA-04-21		TBG Project: 20699
		Address:CR 10 & Fallis Line, Millbrook		TBG Client: Vargas (C/o Peter Berardi)
Ref	Item	Comment	**Consultant**	Formal Response
Curve Lake Memo				
Memo from Chief Emily Whetung, dated Sept 28, 2021	**DPS**	Curve Lake First Nation is requiring a File Fee for this project in the amount of $250.00 as outlined in our Consultation and Accommodation Standards. This Fee includes project updates as well as review of standard material and project overviews. Depending on the amount of documents to be reviewed by the Consultation Department, additional fees may apply. Please make this payment to Curve Lake First Nation Consultation Department and please indicate the project name or number on the cheque.	Charter Group	The fee was paid in November 2021.
		In order to assist us in providing you with timely input, it would be appreciated if you could provide a summary statement indicating how the project will address the following areas that are of concern to our First Nation within our Traditional and Treaty Territory: possible environmental impact to our drinking water; endangerment to fish and wild game; impact on Aboriginal heritage and cultural values; and to endangered species; lands; savannas etc.	GHD Environment	GHD has prepared the Environmental Impact Study Report to address potential environmental issues associated with a plan of subdivision. Construction within the proposed development envelope will result in no negative impacts on the functions of identified natural heritage features provided the recommendations outlined in Sections 5 & 7 of the EIS are implemented. GHD's recommendations have been made to address potential impacts to natural heritage features and/or their functions during the site preparation, construction and post-construction period. A summary of same is being provided directly to Curve Lake.
		After the information is reviewed it is expected that you or a representative will be in contact to make arrangements to discuss this matter in more detail and possibly set up a date and time to meet with Curve Lake First Nation in person (or virtually).	TBG	Noted.
		Although we have not conducted exhaustive research nor have we the resources to do so, there may be the presence of burial or archaeological sites in your proposed project area. Please note, that we have particular concern for the remains of our ancestors. Should excavation unearth bones, remains, or other such evidence of a native burial site or any other archaeological findings, we must be notified without delay. In the case of a burial site, Council reminds you of your obligations under the Cemeteries Act to notify the nearest First Nation Government or other community of Aboriginal people which is willing to act as a representative and whose members have a close cultural affinity to the interred person. As I am sure you are aware, the regulations further state that the representative is needed before the remains and associated artifacts can be removed. Should such a find occur, we request that you contact our First Nation immediately	Aecom	AECOM is aware of Curve Lake First Nation's concerns for their ancestral remains and will notify the community as soon as possible should any bones, remains, or other such evidence of an Indigenous burial site or any other archaeological findings be identified. If a burial site is unearthed, AECOM will follow through with our obligations under the Cemeteries Act and will notify Curve Lake First Nation immediately before the remains and associated artifacts are removed.
		Curve Lake First Nation also has available, trained Cultural Heritage Liaisons who are able to actively participate in the archaeological assessment process as a member of a field crew, the cost of which will be borne by the proponent. Curve Lake First Nation expects engagement at Stage 1 of an archaeological assessment so that we may include Indigenous Knowledge of the land in the process. We insist that at least one of our Cultural Heritage Liaisons be involved in any Stage 2-4 assessments, including test pitting, and/or pedestrian surveys to full excavation.	Aecom	AECOM has worked successfully with Cultural Heritage Liaisons from Curve Lake First Nation in the past and we look forward to engaging the community during Stage 1 background research in order to include Indigenous knowledge of the land in the process as well as any fieldwork associated with Stage 2-4 Archaeological Assessments.
		Although we may not always have representation at all stakeholder meetings, as rights holders', it is our wish to be kept apprised throughout all phases of this project. Please note that this letter does not constitute consultation, but it does represent the initial engagement process.	TBG	Noted.

Otonabee Region Conservation Authority				
Memo from Matthew Wilkinson, Planner, dated Oct. 25, 2021	1	ORCA technical staff have identified some inconsistencies in the characterization of the floodplain and erosion hazard boundary identification. Development is being proposed on slopes associated with the Baxter Creek Tributary, within close proximity to the Baxter creek floodplain. Section 3.1 of the PPS directs development outside of hazardous lands and prohibits development within a floodway. ORCA Technical Staff note a number of outstanding comments and require a floodplain analysis, erosion hazard study, slope stability analysis and grading plan be submitted. These comments are articulated in the accompanying memo ('Engineering Review' dated October 20, 2021). Until these issues are satisfactorily addressed, it is the opinion of Otonabee Conservation that consistency with PPS Section 3.1 and compliance with ORCA development policies have not yet been demonstrated.	GHD Geotech	Erosion Hazard Limit (EHL) Assessment along the Tributary of Baxter Creek intersecting the property was completed and provided in the updated geotechnical investigation report. The recommended EHL setback does not affect previously defined development limits.
	2	The Authority has reviewed the application as a service provider to the County of Peterborough and the Township of Cavan Monaghan, in that we provide technical advice on natural heritage matters through a Memorandum of Understanding. As noted, there are natural heritage features of significance present on the subject property and the adjacent lands. ORCA Technical Staff note a number of inconsistencies in the characterization of the headwater feature, wetland and woodland habitats and their boundary identification. Additional information is required for the road crossing/culvert installation. These comments are articulated in the accompanying technical memo ('Ecological Review' dated October 18, 2021). Until these issues are satisfactorily addressed, it is the opinion of Otonabee Conservation that consistency with Section 2.1 and 2.2 of the PPS, conformity with 4.2.3 and 4.2.4 of Growth Plan for the Greater Golden Horseshoe and compliance with ORCA development policies have not yet been demonstrated.	GHD Environment	See Ecology Review Response.
	3	The proposed development is subject to Ontario Regulation 167/06, Otonabee Conservation's "development, interference with wetlands and alterations to shorelines and watercourses" regulation. Otonabee Conservation regulates development within 30 metres from the boundary of non-provincially significant wetland, and 15 metres from a flooding/ erosion hazard. The stormwater management plan was also reviewed in accordance with ORCA's regulatory requirements to ensure that an ORCA permit can be issued. The outstanding information noted above requires that theses features/hazards will need to be satisfactorily identified to assess the extent of the ORCA regulated area. The noted concerns regarding flooding hazard, erosion hazard, wetland identification, and impact on hydrology must be satisfactorily addressed in order for Otonabee Conservation to be in a position to issue a permit.	GHD Environment	Erosion Hazard Limit (EHL) Assessment along the Tributary of Baxter Creek intersecting the property was completed and provided in the updated geotechnical investigation report.
	4	The application was also reviewed in consideration of the SPP. It was determined that the subject property is not located within an area that is subject to the policies contained in the SPP.	GHD Environment	Acknowledged

Otonabee Region Conservation Authority - Ecology Review				
	5	Baxter Creek tributaries and associated valley lands, wetlands, seepage areas/seeps, significant woodland, as well as associated habitat for brook and brown trout (photo #24, HDF/Zone 1), significant wildlife (special concern), threatened grassland birds, and potential endangered bats traverse portions of the property and adjacent lands. These features are currently zoned either Natural Core or Natural Linkage. The EIS does not provide details of the proposed development and site alteration as presented by others. (e.g FSR & PRR).As a result of this discrepancy, natural heritage/water inventories and/or impact assessments are either incomplete or missing in support of development and site alteration proposed into features. **This will need to be addressed to satisfy relevant policies and demonstrate regulatory compliance**	GHD Environment	Acknowledged. Soil profiles were not completed. Locations of seeps were documented as containing sparse vegetation with probable hydric soils, however confined to these small seepage areas. Red osier-dogwood, and other wetland indicator plant species were documented in community 3 and 23, although sparsely documented. GHD documents all species within a community, however the plant list presented in Appendix A does not quantify its presence. The vegetation communities were classified based on species dominance, and these communities were not dominated by wetland species or contained >50%. Community 15 and 16 were located on sloped land, the aerial photo may appear that they should be extended, however based on species dominance GHD delineated the current boundary. The vegetation outside of these communities was scattered trees and shrubs along the edge of community 1(CUM1-1) and not dominant in either community therefore lumped into community 1. The white ovals outlined on Figures C & D within ORCA comments do not support hydric soils, with the exception of those identified as wetland communities (community 16 & 18). As mentioned above, all vegetation within a community was documented, however a wetland is not classified so, with the presence of a few wetland species (wetland plant dominance of >50% is the threshold). None of the upland communities that may have had a few wetland plant species within them met that criteria. All watercourses were identified and labelled on the Figures. Significant slopes were identified on site and were definitely observed along the edge communities in the areas of community 15 & 17. The addition of topographical lines on a Figure in the next submission of the report may help assist visualizing the placement of these communities along the slope.
1. NHS Features Constraint Map:	**Wetlands (GHD communities 5, 6, 10, 11, 14, 16 & 18 – associated with floodplains or woodlands on site):**			
	a	GHD confirms seepage areas/seeps (site of emergence of ground water or hydric soils) within communities 7, 12, and 14. Section 3.2.1.2, as well as Appendix A (plant list), identifies spotted jewelweed and marsh marigold, wetland indicator plants, associated with the ground cover in GHD communities 12 and 13 (FOC4 & FOC4-1, respectively). Given field data was collected in drought conditions (2018 Level-1, 2020 Level-2 low water), in the absence of soil data to review, a cedar swamp (e.g., SWC1-1 or SWC3-1) can be misidentified as dry, upland forest (e.g., FOC4 or FOC4-1). Portions of GHD communities 3 (community 3 is in an area with high ground water) and 23 support red-osier dogwood, another wetland indicator plant, and the boundaries for communities 15 and 1appear to be larger than what is mapped given the details on the aerial photo. Figures C and D, highlight these areas of concern – do these areas (see white ovals, Figures C and D) support hydric soils, as well as wetland plants? Are these areas associated with a watercourse or located at the bottom of a slope? **Please provide soil and microtopography information in support of reviewing proposed ELC description for the property.**	GHD Environment	Acknowledged. Soil profiles were not completed. Locations of seeps were documented as containing sparse vegetation with probable hydric soils, however confined to these small seepage areas. Red osier-dogwood, and other wetland indicator plant species were documented in community 3 and 23, although sparsely documented. GHD documents all species within a community, however the plant list presented in Appendix A does not quantify its presence. The vegetation communities were classified based on species dominance, and these communities were not dominated by wetland species or contained >50%. Community 15 and 16 were located on sloped land, the aerial photo may appear that they should be extended, however based on species dominance GHD delineated the current boundary. The vegetation outside of these communities was scattered trees and shrubs along the edge of community 1(CUM1-1) and not dominant in either community therefore lumped into community 1. The white ovals outlined on Figures C & D within ORCA comments do not support hydric soils, with the exception of those identified as wetland communities (community 16 & 18). As mentioned above, all vegetation within a community was documented, however a wetland is not classified so, with the presence of a few wetland species (wetland plant dominance of >50% is the threshold). None of the upland communities that may have had a few wetland plant species within them met that criteria. All watercourses were identified and labelled on the Figures. Significant slopes were identified on site and were definitely observed along the edge communities in the areas of community 15 & 17. The addition of topographical lines on a Figure in the next submission of the report may help assist visualizing the placement of these communities along the slope.
	b	In 2018, technical staff recommended GHD review field data, in consideration of the existing provincial OWES file associated with the evaluated wetland(s) on the property – this includes a review of size and extent of new wetland boundaries, hydrological connectivity, species at risk, etc., to confirm wetland status with provincial staff, i.e., does new data change wetland status? This information is missing from the reports (see Figure E).	GHD Environment	Evaluating the wetland on the property was not in the original scope of work.
	c	Technical staff note that portions of GHD communities FOM (no community# or details provided), 8 and 12 (FOC4), and 14 (SWC1-1) are associated with watercourse floodplains and have been mapped by the province as wetland. The 'Preliminary Site Servicing and Grading Plan' also confirms wetlands in proximity of adjacent lands (15T-16001) within some of these GHD communities. Future development appears to encroach into these hydrologic features and their buffers. If development or site alteration is proposed within a wetland, please confirm how feature removal is consistent with PPS policy 2.1.4 a), given point b) above, and 2.2.1 e). A mitigation hierarchy review is recommended to demonstrate consistency with PPS 2.2.1 e) and required to satisfy relevant Otonabee Conservation wetland policies (see 7.1(7), 7.2(8, 14 & 16)) – lot creation within a wetland is not consistent with Otonabee Conservation policy 7.1(1&2)	GHD Environment	GHD confirmed any wetlands in the field using OWES. The proposed development will not interfere with communities 8, 12 and 14. A compensation plan will be prepared and submitted for ORCA's approval with the extent of disturbance to any wetlands, watercourses/HDF's, and their buffers. Preliminary mapping of the extent of wetland loss and compensation was prepared and can be identified in Appendix A. Discussions with ORCA staff and details of the wetland removal and compensation options will be completed in the Compensation Plan. The wetlands on the subject property is not considered part of a significant wetland therefore wetlands on the property are not regulated under the PPS. GHD will work with ORCA to ensure a net gain in wetland on site to satisfy ORCA policies 7.1 (7) and 7.2 (8).
	d	Section 5.1 confirms a road crossing that will interfere with wetland. Please quantify extent of wetland interference and provide a wetland compensation plan that demonstrates a net gain in wetland function on site to satisfy Otonabee Conservation policies 7.1 (7) and 7.2(8).	GHD Environment	A compensation plan will be prepared and submitted for ORCA's approval with the extent of disturbance to wetlands and their buffers. Preliminary mapping of the extent of wetland removal and compensation was prepared and can be identified in Appendix A. Discussions with ORCA staff and details of the wetland removal and compensation options will be detailed in the Compensation Plan. GHD will work with ORCA to ensure a net gain in wetland on site to satisfy ORCA policies 7.1 (7) and 7.2 (8).
Watercourses/ Headwater Drainage Features (HDFs) –	e	Figure 1.1 (see Figures C & D) is missing the Habitat Zones or Headwater Drainage Feature (HDF) details. Please confirm the location of HDF/Habitat Zones 1, 2 and 3.	GHD Environment	Acknowledged, Figure 1.1 has been updated with the Aquatic Habitat Zones and survey locations (see attached).
	f	Section 5.4 suggests HDF/Habitat Zone 3 is an intermittent watercourse proposed by others to be realigned. Is this the 4- to 9-metre-wide incised tributary within ELC/community 10 SWC1-2? Why does it need to be realigned and where is the channel realignment located? Technical staff note that lot level conveyance proposed by GHD is a management strategy to mitigate functional loss from feature removal, not a channel realignment proposal.	GHD Environment	Habitat Zone 3 is a first order tributary. The average water depth was 0.03 m with an average wetted width of 0.25 m, at the time of assessment. Please refer to Figure 1 for the Habitat Zone location and Section 3.2.8 for the habitat description.
	g	Photo 23 documents presence of standing water, in August (2020) during Level-2 low water/drought conditions, within HDF/Habitat Zone 3. Are seeps present (looks like flowing water)? Is this area also a wetland (looks like spotted jewelweed within the channel/banks)? According to the 'Evaluation, Classification and Management Drainage Features Guidelines' (2014, CVC & TRCA), defined channels (confirmed by GHD) and presence of flowing or standing water (wetlands or refuge pools), resulting from ground water discharge (seeps, wetlands), during July/August characterizes perennial/permanent flows (i.e., important function). If an HDF provides important hydrology, the management strategy typically is protection. Please provide the HDF assessment associated with recommendation 7.6.2 #2. Explain how feature removal/lot level conveyance is consistent with PPS 2.1.6 (Fisheries Act), 2.2.1 e) (protect, improve, or restore hydrologic features/functions), and Otonabee Conservation policies 7.1(1 & 2) and 8.4(1).	GHD Environment	General fish habitat assessments were conducted as outlined in EIS methods section 2.2.2.9 Fish and Fish Habitat. HDF field surveys were not conducted, however, the HDF assessment classification and analysis has been added to the updated EIS.

(RDF 3) – Habitat Zones 1, 2 and 3 (Fish Habitat):	h	There is a mapped watercourse within Community 23 that traverses Fallis Line; the channel is visible on 2018 aerial photos. The channel appears to connect with a wet area on the subject lands – this feature is not mapped in the EIS. Please confirm if feature is present and how it will be managed.	GHD Environment	The potential feature was assessed by GHD biologist in the field and no watercourse feature were present within the development area. Only standing water was observed in the agricultural field. A mapped watercourse is present north of the property, outside the development area.
	i	Table 5.1 and Section 7.6.1 suggests no in-water works proposed for the road crossing. However, there appears to be a 60-metre-long (approximate) box culvert and wing walls proposed by others within the tributary. Is the watercourse to be realigned or removed? What are the site conditions during spring freshet? Are there other feasible solutions that keep this infrastructure out of the watercourse/fish habitat (see Otonabee Conservation policies 8.1(1) and 8.4(1))?	GHD Environment	The watercourse crossing has been reduced to 23.1m in length to reduce fish habitat and wetland impacts. See EIS for updated impact assessment.
	j	Sections 5.5 and 7.7 recommend a bioswale feature/natural channel design for SWM outlets. While technical staff supports this in principle, the FSR does not appear to provide these details. The current outlet includes a headwall located out of the 30-metre watercourse buffer/VPZ – would the proposed bioswale extend into the 30-metre VPZ or can the SWM headwall/outlets be setback to accommodate an outflow channel and protect the 30-metre VPZ (see Otonabee Conservation policy 8.1(9) and EIS recommendation 7.7 #1)? What are the SWM measures proposed to mitigate thermal, as well as salt, pollution to the receiving waters?	Valdor	The bioswale feature/natural channel design for SWM outlets will be provided in the detailed design submission. We are providing the enhanced level (Level 1) of water quality treatment for the wet pond which will provide 80% TSS removal. A bottom draw pipe is proposed in the SWMP design and shoreline plantings are to be included in the landscape plan to provide shading to the SWM pond perimeter to provide thermal mitigation.
	j	Contrary to the Planning Report, the EIS does not reference a Master Plan. Please provide relevant details in support of the SWM design assessment for the next submission.	GHD Environment	Master Plan is referred to as "Site Plan" and shows complete development of the subject site.
		2 - 30-meter Buffer or Vegetation Protection Zone (VPZ)		
	a	Please update EIS to demonstrate how the work proposed by 'others' is consistent with Growth Plan policies 4.2.3.1 and 4.2.4 (1 to 3), PPS policies 2.1.5, 2.1.6, 2.1.7, 2.1.8 and 2.2.1, Official Plan policies 6.7, and Otonabee Conservation policies 7.1(1 & 2), 7.1(7), 7.2(8, 14 & 16), 8.1(1 & 9) and 8.4(1).	GHD Environment	A review of all documents from "others" will be completed and updated in the EIS. As identified in Section 6 of the EIS *The study area falls within an identified settlement area associated with the Village of Millbrook. It is located within a recognized Growth Centre that has specific policies under the Township of Cavan-Monaghan Official Plan. As a result, Sections 4.2.2, 4.2.3, and 4.2.4 of the GPGGH 2020 are not applicable in the study area.*
	b	Please add the 30-metre VPZ/buffer from all wetland and woodland boundaries onto the 'Preliminary Site Servicing and Grading Plan'.	Valdor	Added as requested.
	c	The proposed lots and cul-de-sac within the southeastern future block appear to traverse a watercourse/HDF, wetlands associated with the watercourse/HDF floodplain, and the recommended 30-m VPZ. Please add these features to appropriate plans.	GHD Environment	This watercourse/HDF feature was determined to be absent during our 2020 field surveys.
	d	Quantify extent of disturbance into wetlands, watercourses/HDFs, woodlands and buffers in support of functional compensation, and identify compensation envelopes, where applicable, on site	GHD Environment	A compensation plan will be prepared and submitted for ORCA's approval with the extent of disturbance to wetlands, watercourses/HDF's, woodlands and their buffers. Preliminary mapping of the extent of wetland/woodland was prepared and can be identified in Attachment A
	e	Given the highwater mark is variable, the 30-metre VPZ should be applied from the channel top of bank or wetland boundary, not the highwater mark. Please update plans accordingly.	GHD Environment	Our high water mark is from the defined channel. We have a 30m buffer from the watercourse outlined in blue on the plan.
		3. Significant Habitat		
	a	Contrary to the EIS, an ESA permit may be required if activities destroy habitat surrounding a barn structure that is used by barn swallow, i.e., Category 2 and 3 habitats. Please confirm with MECP prior to commencement of work.	GHD Environment	Discussions with MECP will determine compliance requirements of the Endangered Species Act as a condition of approval.
	b	Given bird surveys were conducted in 2018, technical staff note that additional surveys may be required prior to site alteration to demonstrate consistency or applicability of the ESA.	GHD Environment	Discussions with MECP will determine compliance requirements of the Endangered Species Act as a condition of approval.
	c	The recommended timing windows should be broad-spectrum – extended into October to protect birds, bats, and turtles, e.g., no tree removal from April 1 to November 1. Confirm timing windows with MECP (species at risk) and MNMDNRF (fish) prior to commencement of work.	GHD EIS	Discussions with MECP will determine compliance requirements of the Endangered Species Act. The report will be revised to include additional timing windows for birds, bats and turtles
	d	Further technical review by GHD, e.g., bat acoustic surveys, as well as MECP, may be necessary to confirm habitat and/or assess impacts/mitigations if development or site alteration will be proposed within the forested features and 30-metre VPZ on the subject property.	GHD Environment	Discussions with MECP will determine what additional surveys may be required for bats

Otonabee Region Conservation Authority - Plan Review and Permitting - Oct. 20. 2021				
1. Floodplain Analysis - Baxter Creek Tributary	a	Please provide a digital copy of the hydraulic models (existing and proposed conditions).	VALDOR	Digital copies of models are included, as requested.
	b	The regulatory floodplain should be done to represent the proposed built-out scenario. Please adjust Area 403 VO model parameters to include the proposed impervious rates of the development.	Valdor	The floodplain hydrologic/hydraulic modeling has been updated for the proposed development conditions.
	c	The Street 'A' cul-de-sac, all associated fill for side slope and lots 56 to 62 are potentially within the regulatory floodplain from Baxter Creek and the Tributary. i. The regulatory floodplain for the Baxter Creek Tributary needs to be extended and joined with the Draft Baxter Creek Floodplain (ORCA 2021) to properly delineate the regulatory floodplain in this area. ii. The boundary condition for the Tributary section will be derived from the appropriate section of the Baxter Creek model.	VALDOR	Please provide a copy of the Draft Baxter Creek Floodplain (ORCA 2021) and we will make this adjustment.
	f	The river station numbers in Table E.5 Post-Development do not match those on Figure 6 Floodplain Mapping Post-Development.	GHD EIS	Updated.
	e	The contour lines on both the pre-development and post-development floodplain mapping doesn't provide enough labels to verify location of the floodline.	GHD EIS	Updated.
	f	Please include the 2-yr through 100-yr storms flows in the proposed model.	GHD EIS	We are in the process of obtaining the SWMP report and flows for the property on the West to account for the attenuated flows to run the 2 to 100 year storm flows in the floodplain model. The floodplain setback should not be affected as it is based on the regional storm.
2. Erosion Hazard Limit	a	Development is proposed on slopes associated with the Baxter Creek Tributary. Please calculate and delineate the Erosion Hazard Limit for the north and south slopes of the Baxter Creek tributary for the entire length of creek within the development boundaries. The Erosion Hazard Limit will be determined following the criteria outlined in Technical Guide River & Stream Systems: Erosion Hazard Limit (MNRF, 2002). This will include the area covered by • Street 'D' Lots 35 to 38, • Street 'A' Lots 62 to 76, • Block 132 Natural Heritage System, • Block 118 SWM Pond	GHD Geotech	Erosion Hazard Limit (EHL) Assessment along the Tributary of Baxter Creek intersecting the property was completed and provided in the updated geotechnical investigation report. The recommended EHL setback does not affect previously defined development limits.
	b	All development including lot limits will be outside the Erosion Hazard Limit.	GHD Geotech	All proposed development is located outside the defined EHL setback
	c	If development including lot limits are within the Erosion Hazard Limit, then a slope stability study is required, including cross section of slope, proposed slope excavation and point loads for all buildings.	GHD Geotech	Not applicable, all proposed development is located outside the defined EHL setback
3. Hydrologic Parameter	a	Based on standard runoff coefficient tables, the CN value of 81 for row crops in Area 101 with a 7.3% slope is high. The CN value should be around 75. i. Please adjust calculation tables and VO model	VALDOR	Updated.
	b	Based on standard runoff coefficient tables, the C value of 0.65 for row crops in Area 101 with a 7.3% slope is high. The value should be around 0.45. i. Please adjust C value & TC calculation tables and VO model.	VALDOR	Updated
	c	There are wetlands through the proposed development area and within the surrounding drainage areas. Why are wetlands not included within the VO models hydrologic parameters calculation tables. The hydrologic parameter tables for both VO Models (floodplain & subdivision) should be adjusted.	VALDOR	Updated
	d	Area 101 land use generates a CN value of 66.9. The weighted CN value used is 70. Using the formulas in VO model, the modified CN value is 63. i. Please check calculation and provide. ii. Please update VO model.	VALDOR	Updated
	e	Area 402 land use generates a CN value of 59.4. The weighted CN value used is 62. Using the formulas in VO model, the modified CN value is 58. i. Please check calculation and provide. ii. Please update VO model.	VALDOR	Updated
	f	Area 403 land use generates a CN value of 56.7. The weighted CN value used is 64. Using the formulas in VO model, the modified CN value is 54. i. Please check calculation and provide. ii. Please update VO model	VALDOR	Updated
	g	Please provide a digital copy of the VO models	VALDOR	Digital copies of models are included, as requested.
	4	Under the post development scenario (Figure 8), Drainage area 204 is split into 3 areas: i. the proposed road and boulevard drains into the proposed wet pond (Area 203). ii. The lots on the north side of the road drain into Baxter Creek tributary, iii. The lots on the south side of the road drain south onto Nina Court or east into Baxter Creek tributary,	VALDOR	Drainage area 204 will drain uncontrolled

4. Drainage Area 102 & 104	a	The Preliminary Site Servicing and Grading Plan provides road elevations that show overland flow on Street 'A' between the high point and the cul-de-sac will drain down Street 'F' onto a re-configured Nina Court and into the SWM Pond designed for that development. i. Please provide the calculations for the Nina Court SWM Pond. ii. Does the current configuration of the SWM Pond have sufficient capacity to control the additional overland flow from the proposed Millbrook South East development? iii. Based on site restrictions, is there sufficient area for the required expansion/regrading of the SWM Pond?	VALDOR	The draft plan has been updated, overland flow on Street 'A' will no longer drain down Street 'F' and therefore not applicable.
	b	The post development VO model does not have any flow from Area 204 connect to Wet Pond (Area 203).	VALDOR	Drainage area 204 will drain uncontrolled
5. Grading Plan Preliminary Site Servicing and Grading Plan	a	The construction of Fallis Line requires cut and fill operations along the north side of the municipal right-of-way on adjacent privately owner property. Has this property been purchased by the proponent?	TBG	The property has been purchased by the proponent.
	b	The Erosion Hazard Limit will be delineated on the Preliminary Site Servicing and Grading Plan.	TBG	The Erosion Hazard limit is within the 30m watercourse setback.
	c	The Street 'A' cul-de-sac, all associated fill for side slope and lots 56 to 62 are potentially within the regulatory floodplain from Baxter Creek and the Tributary. i. The regulatory floodplain for the Tributary needs to be extended and joined with the Draft Baxter Creek Floodplain (ORCA 2021). ii. The floodplain plotted behind lots 4 to 8 on Nina Court will be verified with the Baxter Creek Floodplain provided. iii. There will be no development (including lot limits, roads or grading) within the regulatory floodplain. iv. The Baxter Creek floodplain with cross-sections and elevations will be provided in digital format.	VALDOR	i. Please provide the Draft Baxter Creek Floodplain (ORCA 2021) ii. The draft plan has been updated, overland flow on Street 'A' will no longer drain down Street 'F' and therefore not applicable. iii. Noted. iv. A digital copy of the floodplain model is included, as requested.
	d	Please delineate the wetland boundary and associated 30m buffer on the Preliminary Site Servicing and Grading Plan.	VALDOR	Please refer to updated drawing and EIS.
	e	The proposed SWM Pond grading extents and emergency spillway are within the wetland boundary and associated 30m buffer. All construction associated with the SWM Pond including grading extents and emergency spillway will be outside the wetland 30m buffer.	VALDOR	In reviewing the updated EIS from GHD we will ensure that the SWM pond will not encroach within the wetland boundary. We will show more details with respect to that at the detailed design stage.
	f	Street 'D' Lots 35 to 38 and Lot 43 on Street 'A' – lot boundaries are within the wetland boundary and associated 30m buffer. Please adjust the boundaries to be outside the 30m wetland buffer.	TBG	Street 'D' has been revised to Street 'B'. Lots 35 to 38 have been removed and the wetland boundary and associated buffer have been respected.
	g	Area 202 (4.27 Ha) is shown as Future Development on the SWM Drainage Plan Post Development and included in the ultimate design for the SWM Pond (Block 131). With individual residential lots along Street 'A' and 'D', where is the proposed overland flow access to Street 'A'?	VALDOR	There will be a road allowance that connects to Street "B" to direct flow from 202 to the proposed SWMP.
	h	Require rear yard swale and catch basins for lots 18 to 28 on Street 'A'	VALDOR	Specific details regarding rear yard swales, catch basins and other drainage requirements will be provided at detailed design stage. Drainage will be contained within the development and not impact adjacent private property
	i	The proposed retaining walls should be designed by the manufacturer of the proposed wall material. Cross-sections should be added to the drawings.	VALDOR	Agree and if retaining walls cannot be eliminated at detailed design stage we will provide additional design information at that time.
	j	What erosion & scour protection will be implemented within the creek and section of bank at the SWM Pond outlet pipe connected to the box culvert wing wall? Provide cross-section of proposed works with elevations and notes.	VALDOR	This will be addressed at detailed design.
	k	The proposed grades along the property limits between the SWM Pond and the existing lots on Nina Court don't match existing.	VALDOR	Ex. Property line elevations will be met to avoid any adverse affects on existing lots
	l	There are several locations on the drawing where text is overlapping making it hard to read.	VALDOR	Amended.
6. Wet Pond	a	The borehole best representing the soil and groundwater conditions within the area of the proposed wet pond is BH-12. i. The BH-12 Borehole Report states that groundwater was encountered at 2.7m bgel and that the borehole caved in at 3.4m. Based on the existing contour information around BH-12 and the wet pond, the bottom of the forebay at 210.50m and the wet pond at 211.00m is below the groundwater elevation. Please confirm groundwater elevation at wet pond location.	GHD Geotech	Groundwater seepage within BH-12 within the proposed stormwater pond was encountered at about 213 m (the pond bottom is proposed to be about 211 m). Caving of the borehole can also provide an approximate depth of groundwater. At BH-12, caving was noted at 3.4 m or about 212.3 m. Based upon the groundwater seepage and caving observations, groundwater is anticipated to seep into the pond (i.e. above the pond bottom). It is our opinion that the pond should be lined.
	b	To maintain a separation between stormwater and groundwater, please provide a liner for both components of the wet pond (main cell & forebay). Please add liner and appropriate notes to the drawings and detail cross-section.	VALDOR	We acknowledge the groundwater is higher than the proposed wet pond bottom. It is anticipated that a clay liner will be installed to address this issue. The thickness and other specifics to be provided at detailed design.
	c	The second flow control structure on the wet pond is Weir #1 with a width of 1.2m. i. What exactly is the configuration of this outlet structure? DICB? ii. Based on type of outlet, is the weir equation appropriate? iii. Should there be a manhole structure?	VALDOR	We have proposed a box manhole structure with a 1.2m wide weir cut into the wall of the box manhole. Other design details will be provided at detailed design stage.
	d	For pond maintenance, there should be an area for sediment drying built into the design of the pond.	VALDOR	Efforts will be made to accommodate as much temporary sediment storage as possible within the proposed pond block at detailed design.
	e	The outlet pipe is connected to the box culvert wing wall on the downstream side of the Street 'A' crossing. i. What is the invert of the outlet pipe? ii. The operation of the SWM Pond – discharge into the watercourse as outlined in the stage-storage-discharge table must not be impacted by flows within the Tributary. Is the pipe and pond function impacted by backwater through the pipe? iii. I have asked for the 2-yr through 100-yr storms flows to be modelled within the floodplain hydraulic model to obtain water levels.	VALDOR	Upstream invert: 211.60m Downstream invert: 211.15m We are in the process of obtaining the SWMP report and flows for the property on the West to account for the attenuated flows to run the 2 to 100 year storm flows in the floodplain model. The floodplain setback should not be affected as it is based on the regional storm.

7. Watercourse and Valley Crossing	a	The proposed crossing involves the filling of the valley through a 60m (200 feet) wide swath. i. Has the EIS properly identified the loss of habitat and impact on fish movement through the proposed structure. ii. Please refer to Otonabee Conservation Ecology comments.	GHD EIS	EIS has been updated to reflect the updated watercourse crossing design of a 23.1m long concert box culvert.
	b	Are there other alternative designs for the road crossing (i.e. open span bridge) that would reduce the impact on the watercourse & valley and still provide function.	VALDOR	The road crossing was redesigned to minimize disturbance to the watercourse area. Please refer to updated Preliminary Site Servicing and Grading Plan.
8. Overland Conveyance	a	Street 'A' has been designated as the major storm flow conveyance route to the stormwater management facility.	VALDOR	Correct.
	b	Please provide the calculations to demonstrate that the major storm flows (100-Year flow minus the 5-Year flow) will be conveyed within the right-of-way limits of Street 'A'.	VALDOR	A Flowmaster calculation was completed to demonstrate that the major storm flows (100-year flow minus the 5-year flow) can be conveyed without exceeding the municipal criteria (i.e. 0.3m depth max.). The calculations are provided in Appendix D.
	c	Please demonstrate that the major storm flows are conveyed across the Baxter Creek Tributary crossing of Street 'A' without spill into the creek.	VALDOR	A flowmaster calculation was completed to demonstrate that the major storm flows (100-year flow minus the 5-year flow) can be conveyed below 0.3m and without spilling to the creek. The calculations are provided in Appendix D.
9. Water Balance Solution	a	The Downspout disconnect with additional topsoil is not a viable solution to acquire large volume of infiltration. i. The calculations are assuming rooftop runoff from the downspout will disperse across the entire area of each yard. ii. With downspouts directed toward overland drainage swales between the houses, the water has a limited area and length to infiltrate versus draining onto the road and captured in the storm sewer network.	VALDOR	Infiltration trenches along rear lots are proposed. Preliminary calculations are provided in Appendix 'F' - Table F.10 and further analysis will be provided at detailed design.
	b	Direct infiltration method, such as soak-away pits and infiltration trenches, are required to provide the volume of infiltration needed across this site. i. Please provide calculations and size of infiltration method. ii. Please delineate the location of the infiltration measure on the Preliminary Site Servicing and Grading Plan. iii. Please provide cross-section and detail of infiltration measure on drawings.	VALDOR	Infiltration trenches along rear lots are proposed. Preliminary calculations are provided in Appendix 'F' - Table F.10 and further analysis will be provided at detailed design. Additional design sections and trench details will be provided at detailed design.
10. Geotechnical Investigation	a	Section A-A is in the location of the proposed Medium Density Block 117. The Analysis provides a factor of safety for the natural static condition. The grading plan shows a 10m cut to level out the Block for development. i. Does the proposed cut affect the slope stability? ii. What load was applied to the top of slope to represent the proposed development?	GHD Geotech	A slope stability analysis based on the proposed site grades was completed as part of the updated geotechnical report. Cross-Section 1-1' modeled the proposed grades in the area of the Medium Density Block 148 (previously Block 117). A Factor of Safety (FS) of 1.9 was obtained for cross-section 1-1' (above the minimum target FS of 1.5) based on proposed grades . A surcharge load of 120 kPa was applied at the top of slope to represent the proposed development.
	b	Section B-B is located on a steep section of slope behind lots 100 to 102 on Street 'B' and lots 103 to 107 on Street 'C'. However, the analysis should discuss the proposed fill and the construction of a retaining wall on the steep slopes associated with lots 95 to 100 on Street 'B'. i. How does the proposed fill and retaining wall affect the slope stability? ii. What load was applied to the top of slope to represent the proposed development?	GHD Geotech	A slope stability analysis based on the proposed site grades was completed as part of the updated geotechnical report. Cross-Section 2-2' modeled the proposed grades in the area behind lots 140 and 141 (previously lots 95 to 100). A Factor of Safety (FS) of 1.5 was obtained for cross-section 2-2' (equal to the minimum target FS of 1.5) based on proposed grades and a minimum 1 m embedment of the retaining wall into the native soil. A surcharge load of 120 kPa was applied at the top of slope to represent the proposed development.
	c	Lots 108 to 112 on Street 'C' have a proposed cut in the steep slope at the front of the lots and proposed fill along the rear of the lots. i. How does the proposed cut & fill affect the slope stability? ii. What load was applied to the top of slope to represent the proposed development?	GHD Geotech	A slope stability analysis based on the proposed site grades was completed as part of the updated geotechnical report. Cross-Section 3-3' modeled the proposed grades in the area behind Lots 130 to 133 (previously Lots 108 to 112). A Factor of Safety (FS) of 1.7 was obtained for cross-section 3-3' (above the minimum target FS of 1.5) based on proposed grades . A surcharge load of 120 kPa was applied at the top of slope to represent the proposed development.
	d	Lots 23, 24, 89 & 90 on Street 'A' have a proposed fill operation on the steep slope. i. How does the proposed fill affect the slope stability? ii. What load was applied to the top of slope to represent the proposed development?	GHD Geotech	GHD understands the proposed grades along areas of Lots 27, 28, 62 and 63 (previously lots 23, 24, 89 and 90) will maintain a 3H:1V slope of flatter. GHD has no concerns with the slope stability of proposed grades in this area provided the fill operations is conducted in accordance with engineered fill recommendation provided in the geotechnical report.
11. Erosion and Sediment Controls - at Detail Design Stage	a	Section 8.1 Control Measures doesn't discuss the need for overland swales to direct surface flows to the temporary sediment control basins.	VALDOR	This will be addressed when we provide ESC drawings at detailed design stage.
	b	There is no mention of the proposed watercourse crossing, the requirements for construction in 'dry' conditions, in-water works timing window and construction sequencing.	VALDOR	This will be addressed during the Permit Application stage. Detailed drawings, sequencing and schedules will be provided at that time.
	c	De-watering works and control measures (type and locations) need to be included (SWM Pond, road & servicing).	VALDOR	As per 91 above.

Stantec - Agricultural Impact Assessment				
Summary	1	SUMMARY The AIA generally meets the requirements of the Draft Agricultural Impact Assessment (AIA) Guidance Document, March 2018. Stantec is in agreement with the conclusions of the report.	NONE	THANK YOU
Stantec - FSR				
2.0 Water Servicing	1	The Millbrook water system consists of a water treatment facility drawing water from three wells, a water storage tank and a network of watermains to service the majority of the urban area of Millbrook. The existing Millbrook Water Treatment Plant (WTP) consists of the 3 wells, each with a capacity of 25 litres/second, chlorine disinfection and a chlorine contact tank. The original water storage tank is located on the east end of Millbrook on a high point of land with a usable storage capacity of 1,410 m3	VALDOR	Acknowledge. No action necessary
	2	The water system was expanded including the northerly extension of a watermain and a larger water storage tank and booster pump station constructed on the site of the Township's municipal office and connected to the existing water supply main to service other Millbrook Subdivisions (South - Phase 1, south of Fallis Line and west of County Road 10 and North - Phase 2, north of Fallis Line and west of County Road 10). These new facilities addressed storage issues and ensured proper fire pressures could be maintained at the higher elevations of the Phase 2 development.	VALDOR	Acknowledge. No action necessary
	3	the FSR states that the Township has recently initiated a Water and Wastewater Master Servicing Study as part of a Municipal Class Environmental Assessment to examine water and wastewater servicing alternatives within the current urban boundary and beyond. The study should consider the current proposed draft plan of subdivision and the proposed ultimate development of the subject lands.	VALDOR	Based on the preliminary findings of the Servicing Study there is residual capacity available to service the development.
	4	For the current proposed draft plan, the maximum day domestic demand has been calculated to be 181.9 litres / minute based on equivalent population and the maximum day plus fire flow has been calculated to be 8,182 litres / minute. For the proposed ultimate development maximum day demand has been calculated to be 475.0 litres / minute and maximum day plus fire flow has been calculated to be 8,475 litres / minute. Summarized on Table 2A and Table 2B of the FSR, broken down by dwelling and land use type.	VALDOR	See updated plan and tables
	5	The subject site will be serviced by a 250 mm diameter watermain on Fallis Line which is currently stubbed immediately east of County Road 10. The proposed watermain system will be looped by connecting it to the existing 150 mm diameter waterman on Nina Court at the south limit of the development.	VALDOR	Acknowledge. No action necessary
	6	The local internal water distribution system within the subdivision ranges in diameter from 150 mm diameter to 250 mm diameter, connected to the trunk watermain. The configuration of the site watermains is illustrated on the Preliminary Site Servicing & Grading Plan attached to the FSR. The FSR states that in accordance with Township standards, individual dwellings are to have separate water service connections and in accordance with the Ontario Building Code (OBC), the dwellings will be serviced with 25 mm diameter connections given that it is anticipated that each dwelling will have more than 16 fixture units.	VALDOR	Acknowledge. No action necessary
	7	Water meters are required and are to be purchased from the Township and are to be installed inside the dwellings and have remote readout devices.	VALDOR	Acknowledge. No action necessary
	8	Water supply and flow for fire protection was calculated using criteria from the Water Supply for Public Fire Protection Manual 1999 by the Fire Underwriters Survey, which takes into account numerous factors including fire resistant construction materials and proximities of adjacent buildings. The calculations which reflect the governing conditions for minimum fire suppression flows for the largest detached dwelling and for the largest interior townhouse unit, being 8,000 litres / minute and 7,000 litres / minute respectively. These fire flows must be available at the nearest hydrants to the dwelling unit types with a minimum pressure of 140 kilo pascals (KPa).	VALDOR	Acknowledge. No action necessary
	9	Fire hydrants will be installed off of the watermain distribution system at the required locations and distance between them in accordance with design guidelines and the OBC, such that a hydrant is available within 90 metres of the principal entrance of each dwelling unit.	VALDOR	Acknowledge. No action necessary
	10	The detailed calculations for the domestic water demand and for the required fire flows are included in Appendix "B" of the FSR. These calculations are in accordance with established design guidelines and follow best design practices. The Appendix also includes some OPSD and Township standard watermain system detail drawings.	VALDOR	Refer to updated plan and report
	11	As mentioned above, the FSR did not address or comment specifically on the adequacy of the supply and flow of water to this development from the external water system. Rather it refers to a Water and Wastewater Master Servicing Study as part of a Municipal Class Environmental Assessment that the Township has recently initiated to examine water and wastewater servicing alternatives within the current urban boundary and beyond. Further, the study should consider the current proposed draft plan of subdivision and the proposed ultimate development of the subject lands.	VALDOR	The study indicated that there is residual capacity available to service the lands.
	12	The current proposed draft plan states that municipal piped water to be provided, but potable treated water capacity needs to be confirmed.	VALDOR	See above
	1	The community of Millbrook is currently serviced by the existing Millbrook Wastewater Treatment Plant (WWTP) built in 1975 and upgraded in 2004 to improve the quality of the discharged effluent.	VALDOR	Acknowledge. No action necessary

3.0 Wastewater Servicing	2	The FSR states that in May 2013, Township had completed a Class Environmental Assessment (Class EA) which investigated alternatives to address concerns with the existing WWTP, in particular, the fact that it did not have sufficient capacity to sustain projected growth and that the existing plant was at the end of its useful life and required substantial upgrades. Based on the recommendations of the EA an expansion and upgrade of the Millbrook WWTP was completed in 2015 to accommodate the additional flows from the urban area including high-level tertiary treatment to provide improved effluent quality to meet new effluent discharge criteria.	VALDOR	Acknowledge. No action necessary
	3	The locations of the existing and proposed trunk sanitary sewers and the WWTP are shown on Figure 3 of the FSR.	VALDOR	Acknowledge. No action necessary
	4	As mentioned in Section 2.0 above, the Township has recently initiated a Water and Wastewater Master Servicing Study as part of a Municipal Class Environmental Assessment to examine water and wastewater servicing alternatives within the current urban boundary and beyond. Further, the study should consider the current proposed draft plan of subdivision and the proposed ultimate development of the subject lands.	VALDOR	Acknowledge. No action necessary
	5	The current Proposed Draft Plan states that municipal sanitary treatment capacity is to be provided, it does not state that it is available.	VALDOR	Based on the study there is residual capacity available in the treatment plant to service this site.
	6	The wastewater flows to be generated use the Township design standards which are based on a Residential Average Daily Flow of 450 litres/person/day with a Residential Peaking Factor formula applied based on population and including an allowance for infiltration. The total flow from the current proposed draft plan of subdivision is 17.40 litres / second and for the proposed ultimate development is 28.64 litres / second and are summarized in Table 3A and Table 3B of the FSR, broken down by dwelling and land use type.	VALDOR	Refer to updated plan and report
	7	The FSR states that 525 mm diameter trunk sanitary sewer has been constructed to the south limit of the subject lands. The trunk sewer, ranging in size from 375 mm diameter to 525 mm diameter will be extended northerly along Street “A” to the proposed Fallis Line sanitary sewer extension east of County Road 10, to service the subject lands as well as future development north of Fallis Line. The alignment of the proposed trunk sanitary sewer is indicated in Figure 3 of the FSR. The FSR further states that an analysis of the downstream sanitary sewer from the subject site to the WWTP, confirmed that there is sufficient capacity as documented in the sanitary sewer design sheet, which is included in Appendix “C”.	VALDOR	Acknowledge. No action necessary
	8	The subject site will be serviced internally by a local sanitary sewer system consisting of 200 mm diameter sewers with a minimum of 1% slope to assist with self-cleansing with maintenance holes provided at a maximum spacing of 120 meters in accordance with standard practice and design guidelines. Each dwelling unit is to be provided with a 100 mm diameter service connection in accordance with Township standards. The layout of the sanitary sewers is illustrated on the Preliminary Site Servicing & Grading Plan attached to the FSR. A sanitary sewer stub (size not indicated) is shown to run from the southeast corner of the Commercial Block to the proposed 450 mm diameter sanitary sewer on Street “A” through an easement between two single detached dwelling units.	VALDOR	Acknowledge. No action necessary
	9	Again, as mentioned in Section 2.0 above, the Township has recently initiated a Water and Wastewater Master Servicing Study as part of a Municipal Class Environmental Assessment to examine water and wastewater servicing alternatives within the current urban boundary and beyond. Further, the study should consider the current proposed draft plan of subdivision and the proposed ultimate development of the subject lands	VALDOR	Refer to updated plan and report
	10	The current proposed draft plan states that sanitary and storm sewers to be provided, but sanitary treatment capacity needs to be confirmed.	VALDOR	Preliminary analysis from the Master servicing report currently underway indicates that there is residual capacity available.
	1	The proposed Millbrook South East development is within the Baxter Creek watershed area, one of twelve watersheds under the jurisdiction of the Otonabee Region Conservation Authority. Baxter Creek originates in the Oak Ridges Moraine and flows in an easterly direction and outlets to the Otonabee River approximate 20 kilometres upstream of Rice Lake. A map showing the location of the Baxter Creek watershed is included in Appendix D of the FSR.	VALDOR	Acknowledge. No action necessary
	2	In accordance with Township standards a major / minor stormwater conveyance concept has been addressed in the FSR for this development.	VALDOR	Acknowledge. No action necessary
	3	As per the Township engineering design criteria, the proposed development is to be serviced with a minor storm system that is designed to convey runoff form the 5 year storm event	VALDOR	Acknowledge. No action necessary
	4	Rainfall intensities for both the 5 year and 100 year storms are calculated in accordance with the 2014 rainfall intensity duration frequency (IDF) data from the Peterborough Airport weather station. The calculations for the rainfall quantities for the 5 year (minor) and 100 year (major) storm events using the Rational Method, are included in the text of the FSR. The IDF curve data is included in Appendix D of the FSR. A schematic layout of the minor system is shown on the Preliminary Site Servicing and Grading Plan attached to the FSR.	VALDOR	Acknowledge. No action necessary
	5	The proposed minor storm sewer system will discharge to a proposed stormwater management (SWM) facility (pond) located in the southwest corner of the site (the FSR incorrectly states that it is located in the northwest corner of the site).	VALDOR	Acknowledge. No action necessary

4.0 Storm Conveyance System	6	Major storm flow system will generally be comprised of overland flow routes along the internal road network directing runoff to a safe outlet. The major system will convey flows in excess of the capacity of the minor (piped) storm sewer system. The major system flow routes are shown on the Preliminary Site Servicing & Grading Plan. Major storm flows will be captured at the low point on Street "A" and conveyed to the SWM pond via an overland flow route. The exception, as shown on the Preliminary Site Servicing and Grading Plan, is the extreme south end of Street "A" (east - west section) and the short section of Street "F", which is shown to discharge to Nina Court. This is a conflict with what the Post-Development flows, Figure 8 discussed below, shows. Therefore, this discrepancy needs to be resolved.	VALDOR	A new draft plan has been provided. There is no longer flow being discharged to Nina Court, therefore this comment is no longer applicable.
	7	There is no indication in the FSR or on the Preliminary Site Servicing and Grading Plan that the Commercial Block will have any type of stormwater detention facility or system. A storm sewer stub (size not indicated) is shown to run from the southeast corner of the Commercial Block to the storm sewer on Street "A" through an easement between two single detached dwelling units.	VALDOR	Additional notes have been provided on the PSS and GP. Erosion control and detention will be provided with the proposed SWM Pond. The overland flow will be conveyed through road allowances.
	8	In accordance with Township standards, storm service connections are to be provided to each dwelling unit. The FSR states that it is presumed that dwellings will have basements and therefore foundation weeping tile systems will be required to discharge to the storm service connections typically through a basement sump pump.	VALDOR	Acknowledge. No action necessary
	9	The FSR states that it is presumed that dwellings will have conventional peaked roofs with eaves troughs and downspouts. As per standard practice downspouts are to discharge to grade over splash pads, preferrable towards sodded areas. Roof downspouts are not to be connected to the storm sewer system.	VALDOR	Acknowledge. No action necessary
	10	The south part of the subject site is traversed by a tributary of Baxter Creek which flows easterly under Street "A". The upstream drainage area is approximately 68.29 hectares and is shown on Figure 4 in the FSR. In order to determine the extent of the ORCA Regulatory Floodplain at this location a model was developed and the floodplain has been delineated for both the predevelopment (Figure 5 in the FSR) and the post development (Figure 6 in the FSR) conditions. As shown in Figure 6, the regulatory floodplain will be contained entirely within the Natural Heritage System open space block as per the current proposed draft plan of subdivision and the proposed ultimate development. Therefore, the proposed lots will be protected from flooding. Supporting documentation for the model and hydraulic calculations are provided in Appendix "E" of the FSR.	VALDOR	Acknowledge. No action necessary
	11	The south part of the subject site is traversed by a tributary of Baxter Creek which flows easterly under Street "A". The upstream drainage area is approximately 68.29 hectares and is shown on Figure 4 in the FSR. In order to determine the extent of the ORCA Regulatory Floodplain at this location a model was developed and the floodplain has been delineated for both the predevelopment (Figure 5 in the FSR) and the post development (Figure 6 in the FSR) conditions. As shown in Figure 6, the regulatory floodplain will be contained entirely within the Natural Heritage System open space block as per the current proposed draft plan of subdivision and the proposed ultimate development. Therefore, the proposed lots will be protected from flooding. Supporting documentation for the model and hydraulic calculations are provided in Appendix "E" of the FSR.	VALDOR	Acknowledge. No action necessary
	12	The FSR indicates that a 2.4 metre wide by 1.2 metre high open bottom concrete box culvert is proposed to cross below Street "A" sized to convey the regional storm flow via the tributary of Baxter Creek.	VALDOR	Acknowledge. No action necessary
	1	A good comparative description, discussion and analysis of Pre-Development versus Post-Development drainage area stormwater flows, Figure 7 and Figure 8 respectively in the FSR, based on the existing topography and the proposed grading within the limits of the current proposed Draft Plan of Subdivision and of the ultimate development is presented and discussed in this section of the FSR. Post-Development flows also include flows from some future institutional and office development lands on the north side of Fallis Line east of County Road 10. As well this section of the FSR provides detailed design criteria and calculations for the design, dimensioning and planned operation and maintenance of the SWM pond, previously referred to.	VALDOR	Acknowledge. No action necessary
	2	Under the existing (Pre-Development) condition, the site north of the Baxter Creek tributary drains in a southeasterly direction to the tributary along with an external area fronting on County Road 10. The portion of the site located south of the tributary drains in a north-easterly direction to the tributary.	VALDOR	Acknowledge. No action necessary
	3	The existing site land is currently primarily forests, meadows and row crops.	VALDOR	Acknowledge. No action necessary
	4	Under the proposed Post-Development scenario, drainage for the majority of the site, including the future external institutional development on the north side of Fallis Line will drain to the SWM pond. An external future residential development area along the east side of County Road 10 has also been identified in the FSR to be conveyed to the SWM pond.	VALDOR	Refer to updated plan and report
	5	The discharge from the SWM pond will be released to the Baxter Creek tributary downstream of the tributary culvert crossing under Street "A", via an outlet pipe also crossing under Street "A".	VALDOR	Acknowledge. No action necessary
	6	Due to grading constraints, the rear of the dwelling lots along the eastern and southern portion of the site will drain uncontrolled to the natural heritage system as show on Figure 8.	VALDOR	Acknowledge. Refer to updated report

5.0 Stormwater Management	7	The FSR states that the proposed SWM pond is to be designed to provide the following levels of control as per the requirements of the MECP, the ORCA and the Township. - Quality Control: The proposed permanent ponds shall be sized to provide Enhanced Level 1 treatment of storm runoff from the proposed development. The proposed pond will be of the wet pond type utilizing a Forebay and a Main Cell located at the southwest corner of the proposed development and is shown in Figure 9 of the FSR. - Erosion Control: Stormwater runoff for the minimum 25 mm storm event is to be stored and released over a minimum of 24 hour period. - Flood Control: Flood storage and control is to be provided to maintain peak outflows from the pond to be at or below pre-development levels for the critical of 6, 12 & 24 hour SCS, the 6,12 & 24 hour AES and the 4 hour Chicago storm distributions for the 2 year through 100 year design storm events.	VALDOR	Acknowledge. No action necessary
	8	The total service area for the SWM pond is approximately 20.61 hectares, including the future development areas. As per the Township standards, MECP SWM pond criteria and recommendations in the geotechnical report, the SWM pond design calls for 5 horizontal to 1 vertical side slopes for the depth range containing the normal water level, with 4 horizontal to 1 vertical slopes for the depth range above the normal water level and 3 horizontal to 1 vertical sloes for the depth range below normal water level. A 4.0 metre wide maintenance access road is to be provided along the top perimeter of the pond.	VALDOR	Refer to updated report for latest information and drainage plan.
	9	The North SWM Pond services a total drainage area of approximately 24 hectares and the South SWM Pond services a total drainage area of approximately 10.85 hectares. A visual OTTHYMO model was created to determine the pre-development flows for the site and assess the post-development flows and performance of the proposed SWM ponds. The supporting model documentation and output are provided in Appendix “E” of the FSR.	VALDOR	We believe this comment in in regards to the Fallis west subdivision application (Not Fallis East).
	10	Other considerations, in addition to the SWM Ponds in regard to quality control discussed in the FSR include: - Roof water leaders directed to ponding areas or soakaway pits or to grassed conveyance rear and side yard swales. However, soakaway pits and ponding areas are not recommended in the Township design criteria, because of the large footprint are required for them. - It was deemed that oil/grit separators along the storm sewer system are not required to augment the required quality control and level of enhanced treatment of storm water runoff that the SWM pond will achieve and discharge after minor storm events. - Grassed swales on the rear and side yards will be incorporated into the grading plan. The swales will convey runoff to rear yard catch basins but will also encourage infiltration.	VALDOR	Acknowledged. No further action necessary.
	11	In accordance with the ORCA requirements for development within the Baxter Creek watershed, enhanced Level 1 water quality protection is to be provided by the proposed SWM pond.	VALDOR	Acknowledge. No further action necessary.
	12	Based on detailed calculation's in the body of the FSR in this Section, the permanent pool storage required is 3,985 cubic metres. Based on detailed calculations to MECP design criteria, the proposed forebay is to be 58 metres in length and 25 metres in width on average.	VALDOR	Refer to updated report for latest information.
	13	In accordance with the ORCA guidelines, erosion control is to be provided using an extended detention active storage zone sized to capture the runoff from a 25 mm rainfall event and release it over a 24 hour (minimum) period. The active detention volume required is 3,267 cubic metres and is achieved in the design.	VALDOR	Acknowledged. No further action necessary.
	14	For quantity control, based on stormwater modeling, the SWM pond has been designed for a total active storage of 8,763 cubic metres. Detailed design calculations are included in Appendix “F” of the FSR.	VALDOR	Refer to latest plan and pond data.
	15	Consideration was also given to minimize the temperature gradient of the water discharged to the receiving water course to mitigate potential negative effects to aquatic life. Measures to achieve this include utilizing a bottom draw discharge pipe and plantings around the perimeter of the ponds to shade the shallower areas.	VALDOR	Acknowledged. No further action necessary.
	16	Criteria have also been established and stated in the FSR to ensure that both ongoing scheduled pond inspection is undertaken and that specific maintenance items and measures are adhered to.	VALDOR	Acknowledged. No further action necessary.
	17	In regard to site water balance, in accordance with the requirements of the ORCA, a site water balance assessment was completed by GHD Ltd. and included in the Geotechnical Investigation Report (March 8, 2021), excerpts from which are included in Appendix F of the FSR. The goal of the site water balance assessment is to determine the overall infiltration deficit resulting from impervious roadway pavements, sidewalks and building roofs, in order to design infiltration facilities to maintain pre-development infiltration volumes. Excerpts from the GHD letter report regarding the water balance analysis are included in Appendix “H” of the FSR. Based on an estimated infiltration deficit of 13,723 cubic metres per year from Predevelopment to Post-Development, low impact development (LID) strategies must be implemented. These strategies can include such things as reducing lot grades, increasing topsoil depth, rainwater harvesting, infiltration trenches, permeable pavement, perforated pipe system, among others.	VALDOR	No further comment from GHD regarding the water balance.

	18	The FSR states that further refinement of the water balance calculations and the design of any LID measures and strategies, are to be completed during detailed design.	VALDOR	Acknowledged. No further action necessary.
6.0 Vehicular & Pedestrian Access	1	The FSR indicates that the layout of the proposed subdivision has been designed with consideration for efficient and safe access and circulation of both vehicular and pedestrian traffic.	VALDOR	Acknowledged. No further action necessary.
	2	The subject site has a frontage on both Fallis Line and County Road 10. However, Fallis Line is currently just a 20 metre wide Township Road Allowance which is unopened and untraveled. County Road 10 is an arterial road which is under the jurisdiction of Peterborough County. It is a rural cross second with two lanes, partially paved shoulders and road side ditches.	VALDOR	Acknowledged. No further action necessary.
	3	Vehicular access at the north end of the subdivision will be facilitated by two connections to the Fallis Line extension, at Street “A” and at Street “C’”(ultimate development). At the south end of the subdivision access will be to existing Nina Court via Street “F” off of the southern end of Street “A”.	VALDOR	Refer to updated plan and report
	4	The streets within the subdivision will be within 20 mete wide road allowances, with Street “A” having a 10.0 metre wide pavement and the rest of the streets an 8.5 metre wide pavement. The proposed streets will have an urban cross section with curb and gutter, crowned with a 2% crossfall. The longitudinal grade ranges from 0.5% to 6.5%. The standard road cross sections are shown in Appendix “G” of the FSR. eh sidewalks are to be concrete and 1.5 metres wide. The roadway allowance width is to be 20 metres for all streets.	VALDOR	Acknowledged. Refer to updated report.
	5	The geotechnical investigation and report undertaken for this site recommends that the pavement structure be 40 mm of HL3 surface course asphalt, 50 mm of HL8 base course asphalt, 150 mm of Granular “A” base stone and 450 mm of Granular “B” subbase stone.	VALDOR	To be confirmed at detailed design
	6	All of these roadway design parameters are reasonable and typical.	VALDOR	Acknowledged. No further action necessary.
	7	Each dwelling will have an attached garage and driveway to be constructed of 40 mm of HL3 surface course asphalt and 150 mm Granular “A” base stone.	VALDOR	Acknowledged. No further action necessary.
	8	Internal pedestrian access will be provided by standard 1.5 metre wide concrete sidewalks generally constructed on one side of the street. Wheelchair ramps are to be constructed at street intersections with tactile warning plates installed in accordance with Provincial accessibility standards.	VALDOR	Acknowledged. No further action necessary.
	9	The text of the FSR didn’t discuss street lighting, but the standard road cross sections indicate street-lights and there is detail for a decorative light pole and fixture in Appendix “J” of the FSR. The detail didn’t indicate if the luminaire fixture is of the full cut off (FCO) type, but indicates Type III distribution, which may be FCO. Stantec’s recommendation is that all street-light fixtures should be full cut off LED lights, for maximum efficiency and to minimize light trespass and light pollution. It did indicate that the luminaire is 75W LED.	VALDOR	More details regarding streetlighting will be provided at detailed design by the electrical consultant.
	10	Comments as to any specific internal or external intersection traffic control measures that may be required in terms of capacity, safety, etc., such as traffic signals and turning lanes, will be addressed in Stantec’s separate review of the Traffic Impact Study prepared for this site.	VALDOR	Acknowledged. No further action necessary.
7.0 Grading	1	A building lot and road grading plan, the Preliminary Site Servicing and Grading Plan, has been prepared as part of the FSR. It is stated that the plan was prepared in accordance with the Township grading criteria which calls for road grades to be between 0.5% and 8.0% and grassed yard areas to be between 2.0% and 5.0%. Where large differential grades can’t be avoided sodded embankments can be designed with a maximum slope of 3 Horizontal to 1 Vertical. In areas where space is limited, retaining walls can be used, but their use should be minimized. There are several other grading design criteria/considerations spelled out in the FSR that were followed in developing the grading plan, including: matching the existing grades along the adjacent properties and road allowances; providing an overland flow route to direct drainage to a safe outlet, and providing sufficient cover over the sanitary sewers.	VALDOR	Acknowledged. Refer to updated, preliminary grading plan in report.
	2	Given that the site is relatively steep, many basement walk-out type lots will be utilized and some areas will require 3:1 slopes and retaining walls.	VALDOR	Refer to updated grading plan in the report.
	3	With the above measures, it is stated in the FSR, that it is anticipated that it will be feasible to achieve the Township grading design standards.	VALDOR	Acknowledged and more details will follow at detailed design stage.
	4	This site is within the ORCA Regulated Area. Therefore, a Grading Permit will be required from their office prior to commencing any topsoil stripping and earthworks. The application for same is to be submitted with the detailed design.	VALDOR	This will take place at the detailed design submission stage.
8.0 Erosion and Sediment Control During Construction	1	The FSR indicates the need for and the types of erosion and sediment control measures to be employed during construction to protect the environment, water courses and adjacent properties. These include temporary sediment control basins, silt fences, mud mats, sediment traps and rock check dams. These are all typical erosion and sediment control measures and demonstrate best management practices. As well they are in keeping with the Erosion & Sediment Control Guidelines for Urban Construction (ESC Guideline) issued by the Greater Golden Horseshoe Area Conservation Authorities in 2006.	VALDOR	Acknowledged. No further action necessary.
	2	Details of typical erosion and sediment control measures are included in Appendix “I” of the FSR.	VALDOR	Acknowledged. No further action necessary.
	3	Mud mats are particularly important at construction access locations to minimize the tracking of mud onto municipal roads.	VALDOR	Acknowledged. No further action necessary.

	4	The FSR summarizes the sequence of construction activities and the related required implementation of sediment controls and as well it provides a schedule for inspections of the erosion and sediment control measures to be undertaken during construction.	VALDOR	Acknowledged. No further action necessary.
9.0 Utilities	1	The FSR states that while some external upgrades by utility providers may be necessary, utilities such as electrical (Hydro One), natural gas (Enbridge) and telecommunications – cable, telephone, internet (Nexicom) will be available to service the subject site. It is standard practice in subdivisions that all electrical and telecommunications utilities be installed underground. The detailed engineering design stage will determine the best location for pedestals, vaults, transformers, streetlights, etc., and will coordinate the layout and other details with the respective utility providers.	VALDOR	Utility Plans to be prepared at detailed design stage.
	2	The FSR recommends that all utility installations be in the form of a four party joint trench, which allows coordination of the placement of all utilities in a common trench excavated by a single contractor, which provides for a safe installation and easier demarcation for future reference. A copy of a typical four party joint trench detail is included in Appendix “J”.	VALDOR	Acknowledged and to be confirmed at detailed design stage.

Stantect - Geotech				
1. Introduction	For consideration	The introduction does not reference if basements are intended for any of the proposed buildings. Clarification in this respect would be of benefit.	GHD Geotech	One-level basements are assumed for the residential dwellings of this development and will be clarified in the revised report.
	Recommendation 1	The section includes reference to the borehole and test pit location plan included as Figure 4. It is recommended that the locations of the investigation holes be superimposed on the Conceptual Master Plan for direct correlation with the proposed scope of development	GHD Geotech	The updated figure is included within our revised report.
2. Scope of Investigation	Consideration 1	The introductory paragraph does not include reference to whether the investigation was intended to address the requirements of the Stormwater Management Pond (SWM). It is suggested that reference to the SWM Pond be added to the paragraph consistent with the explanation provided in Item 8 in this section	GHD Geotech	The investigation was completed to provide recommendations regarding the SWM pond. This can be updated in the revised report.
	Consideration 2	The final paragraph in this section references backfilling of the "test holes". It is recommended that additional detail be provided in this context explaining how the boreholes were backfilled (grout, auger spoils, a combination of these materials?) and how the test pits were backfilled (using the auger spoils, in controlled lifts, tamped in place with excavator/backhoe bucket?).	GHD Geotech	GHD has provided further information in the revised report. The boreholes that were not constructed into monitoring wells were backfilled with a mixture of auger cuttings and holeplug to the surface. Test pits were backfilled from the excavated material placed back in the approximate sequence that it was removed and tamped in place with the bucket.
3 Project Details	Recommendation 2	The date referenced for the Conceptual Draft Plan is February 8, 2021. The date shown on the Conceptual Master Plan in the Planning Rationale Report is April 27, 2021. The number of proposed residential units referenced in the geotechnical report does not match the number of units shown on the more recent Conceptual Master Plan. It is recommended that the plan in the geotechnical report be updated, the text be edited where required, and confirmation be provided that the recommendations in the report remain unchanged based on the most recent plan.	GHD Geotech	We agree. GHD has utilized the revised Master Plan and updated the report to reflect that, as necessary.
	Consideration	There is no reference in this section to whether basements are intended for any component of the development. It is recommended that an appropriate reference be added to this section for purposes of clarity.	GHD Geotech	One-level basements are assumed for the residential dwellings of this development and will be clarified in the revised report.
4.2.1 Regional Physiography and Geology	Recommendation 3	Paragraph 2 references the MECP well records reviewed. The reference to sand and/or gravel (at the surface) is not consistent with the conditions shown on the water well records in Appendix B or with the soil description provided in Section 5 – Hydrogeology. It is recommended that a minor edit be undertaken in this respect for consistency.	GHD Geotech	The well records were reviewed further to clarify this comment. The well records indicate topsoil at the surface in the majority of the well records. Three of the well records indicate clay and stones, thus inferring glacial till at the surface.
	Consideration	The reviewer agrees with the author's cautionary notes with respect to the results of the infiltration tests and the recommendations for additional testing at the time of detailed design. The authors may also wish to indicate that although the test results appear indicative of silty sand to sandy silt soils, the investigation confirmed the prevailing presence of till soils with a wider grain size distribution and containing at least trace clay. The infiltration rate of the till with trace clay may be less than that obtained from the testing that is presumably more indicative of the surficial sandy silt soil which is of limited thickness and/or the surficial disturbed zone in the underlying till soil.	GHD Geotech	We agree. No further comment at this time. Additional testing to be conducted at detailed design stage.
6.1.6 Dewatering for Construction	Recommendation 4	Paragraph 1 refers to the "depth of excavations expected". Can the authors provide some clarification (or qualifier) in this respect in the context of whether basements are intended and/or depth of the SWM Pond below existing grade. Reference to the anticipated depth of the municipal services (2 m to 6 m below existing grade) as stated in Section 6.2.2 would also be of benefit in this section.	GHD Geotech	As per the Geotechnical Investigation report, one-level basements are assumed and a stormwater pond will be constructed with a bottom elevation of approximately 211 m.
	Recommendation 5	Paragraph 1 refers to the artesian (pressured) groundwater conditions known to exist in the area. The reviewer agrees with the author's cautionary notes in this respect. Can the authors provide clarification in the context of the inferred "depth" of the confined aquifer on or in the area of the Site.	GHD Geotech	Two flowing artesian wells were noted in the MECP well records in close proximity of the proposed site. The wells are identified as no. 1902407 and 1902410 on Figure B.1 in our report. These wells are located to the west of the proposed subdivision and encountered groundwater under pressure at ~37 metres below ground surface (mbgs) at no. 1902407 and ~32 mbgs at no. 1902410. Based upon approximate ground surface elevations of this area, the pressurized groundwater was encountered at about 183 m and 186 m at no. 1902407 and 1902410, respectively. Our deepest borehole location (BH-13) within the lowest area of the Site extended 6.7 mbgs (to an elevation of ~207.1 m based upon a ground surface of 213.8 m). A monitoring well was installed at BH-13 to an elevation of ~207.7 m. This monitoring well did not exhibit flowing artesian conditions and was installed in the area of the stormwater pond. GHD is also aware of artesian conditions to the southeast of the proposed development at shallower depths where artesian pressure was encountered at depths on the order of 205 m. Although the artesian conditions appear to be sufficiently deep below the development such that flowing conditions are not expected to be encountered by the construction or development activities, care must be exercised within the development area to stay well above potential artesian zones and minimize the risk of contacting pressurized groundwater conditions. At a minimum, construction activities should not extend beyond the deepest borehole elevation advanced by GHD and should be kept shallower and well above potential artesian conditions, if possible. Furthermore, based on our experience from construction of adjacent residential development to the south (Nina Court) and the expected similar excavation depths, it is our opinion that artesian conditions are not likely to be intersected.
6.2 Geotechnical	Consideration	Paragraph 1 is repeated from the first Paragraph in Section 6 Conclusions and Recommendations.	GHD Geotech	We removed one of these paragraphs.
	Consider	Paragraph 1 Line 2 refers to "overly" loose material in the context of required sub excavation of problematic soils/conditions. The term "overly" is not a term typically used in this context.	GHD Geotech	Report revised

6.2.1 Site Preparation and Excavation	Recommendation 6	Paragraph 2 refers to the excavation requirements above and below the water table. With consideration for the conditions encountered in the investigation, can the authors provide an indication of the depth or elevation of the groundwater table that should be assumed for purposes of design and construction.	GHD Geotech	As noted in the Geotechnical report, no artesian conditions were encountered in any of the boreholes to depths up to 8.2mbgs. Groundwater was encountered in 10 of the boreholes and 1 test pit at depths ranging from 1.8 to 4.0 mbgs. On May 19, 2020, water levels were dry within BH-4 and BH-7 to elevations of 239.5 m (7.6 mbgs) and 232.7 m (6.1 mbgs), respectively. Also, shallow piezometers to 1.5 m were installed at BH-4 and BH-7 and were also dry on May 19, 2020. This illustrates that shallow groundwater is not hydraulically continuous in the upper area (northern area of Site) and a permanent shallow groundwater table is not present in this area. BH-1 and BH-2 did indicate some seepage at 2.6 to 2.4 mbgs, respectively; however, BH-3 through BH-7 were dry boreholes. As noted in the report, some intermittent shallow groundwater seepage may be encountered across the Site during construction that is expected to be handled by pumping from collection sumps. There should be no constraints for construction in the northern area. On the slope and lower lands, water was encountered between 1.8 and 4 mbgs within each of the boreholes from BH-8 to BH-13. The water level on May 19, 2020 at BH-13 was 211.4 m (2.4 mbgs). Grey soils were observed in these boreholes between 2.1 and 6.1 mbgs. Based upon the depths where groundwater was encountered, the soil colouration observations and the water levels in these southern area monitoring wells, there may be conditions with groundwater present throughout the year at depths between about 211 m and 215 m, depending on the location. Groundwater seepage within BH-12 within the proposed stormwater pond was encountered at about 213 m (the pond bottom is proposed to be about 211 m). Based upon this observation, groundwater seepage will occur within the pond and the pond should be lined. Generally, the soils yielding water during our test hole program were observed to be silty sand to silty clay materials. These materials are not expected to yield significant water; however, if sandier or more gravelly layers are encountered such as the sand and gravel layer at BH-13 at a depth of 209.2 m, these units can be expected to produce greater volumes of water and should be avoided if possible. It is our understanding that homes built south of the Baxter Creek tributary will be raised to an elevation of about 216 m. Based upon the static water level at BH-13 (~211.4 m) and where seepage observations were noted in boreholes south of the creek (~211 to 213 m), basements in this area are expected to be above seepage zones. There should be no significant constraints for construction in the southern area and any groundwater encountered is anticipated to be handled by conventional engineering techniques.
	Recommendation 7	It is acknowledged that Section 6.2.4 provides recommendations regarding the placement of engineered fill in areas of proposed foundations. However, the report does not include a more general discussion on cut and fill earthworks. The report clearly states that design grades and elevations were not available at the time of the investigation and report. However, the report does reference 34 m to 35 m of relief across the Site. It would be of benefit to provide general comment regarding the placement of fill, particularly given the presence of the soft silty clay encountered in Boreholes BH-9 and BH-10 and the possibility of consolidation settlement if a grade raise is contemplated. Although presumably of less likelihood, it would be of benefit to provide general comment on possible cuts as well, particularly with respect to the groundwater conditions noted and the underlying artesian conditions referenced. The general commentary could include reference to reuse of the existing soils for purposes of cut and fill and/or requirement for import material for this purpose.	GHD Geotech	Based on a review of the site grading plan prepared by Valdor, it is GHD's understanding that a grade raise of over 4m is proposed in the area of boreholes BH-9 and BH-10 where soft clay soils were encountered to depths of about 5 to 6 m below existing ground surface. It is recommended that the soft silty clay material in this area be sub excavated as directed by the Engineer and replaced with suitable fill material compacted to a minimum of 98 percent Standard Proctor Maximum Dry Density prior to grading activity. In areas that are closest to the potential artesian conditions, raising of the grade (not grade cutting) is proposed.
6.2.2 Service Installation	Recommendation 8	Paragraph 2 references the potential to reuse "some" of the excavated soils as service trench backfill. A recommendation for suitable imported fill should be added for the case where portions of the excavated material are not satisfactory for reuse and imported material is required for this purpose.	GHD Geotech	Report revised. Suitability of imported fill material to be used on site as engineered fill should be verified at the time of construction.
	Recommendation 9	Paragraph 3 references the use of trench plugs at "appropriate locations". It is recommended that a typical spacing be provided and that reference be given to OPSS 1205 and/or OPSD 802.095 standards for this purpose.	GHD Geotech	Report revised. Trench plugs to be installed at appropriate locations along the trench alignment where the bedding and pipe cover is found to conflict with water bearing sand seams to minimize and control any flow of groundwater along the trench bedding and cover materials. The requirement and location of trench plugs is to be confirmed during excavation activities. Trench plugs should be designed and installed in accordance with OPSS 1205 and OPSD 802.095.
6.2.3 Pavement Structure	Consideration	Item 2 refers to "overly" wet or soft subgrade in the context of required sub excavation of problematic soils/conditions. The term "overly" is not a term typically used in this context.	GHD Geotech	Report revised
6.2.4 Foundation Design	Consideration	Page 20, Item 5 discusses placing fill under "sufficiently" wet conditions. It is recommended that this be edited to clarify what "sufficiently" is intended to denote, with consideration for reference to ponding water, standing water, pooling water, periods or precipitation, or similar conditions.	GHD Geotech	Report revised. Sufficiently wet conditions denotes wet subgrades that could be the result of periods of precipitation or runoff causing these conditions.
	Consideration	Table 6.7 provides the recommended preliminary bearing pressures for use in foundation design. The recommended bearing pressure at SLS on the native compact to very dense, or firm to hard native soils is 90 kPa. This appears very conservative. Although this bearing reaction will likely be satisfactory for the single-family residences and townhomes, it is unlikely to provide a practical solution for the design of conventional foundations for the commercial block or for the 5-story medium density residential building. It is recommended that additional input be provided to an increased bearing at ULS and SLS for the commercial block (area of BH-01 to BH-04) and for the 5-story medium density residential building (BH-05). The N-values recorded in these boreholes indicate that higher bearing reactions and resistances should be available at nominally deeper depths than the minimum required for adequate frost protection. In a similar context, if basements are considered, foundation depths below the 1.2 m minimum depth of frost penetration are likely and hence higher bearing reactions and resistances may be realized for use in design of foundations for buildings with basements.	GHD Geotech	A conservative bearing capacity recommendation is provided in the geotechnical report based on the loose to compact and firm soils occasionally encountered at the site. GHD agrees that higher bearing capacities are likely available at the proposed commercial blocks 86, 87 and 116 as compact to very dense soils were generally observed in these areas. The available SLS and ULS bearing capacities for each commercial building can be confirmed once design details are known for these structures.
6.2.5 Floor Slab	Consideration	The section refers to the use of 19 mm angular stone below the floor slabs and a requirement for 100% SPMDD compaction. Clear stone precludes the use of the densometer. Typical industry practice is to recommend several passes by a vibratory compactor and visual inspection to confirm the material is compact and capable of providing satisfactory support for the slab-on-grade.	GHD Geotech	We concur with this comment. No further response is required.
	Recommendation 10	Information in preceding sections of the report indicate likely groundwater seepage at depths of 1.8 m to 4.0 m but no static groundwater table to the depth(s) investigated. Please confirm the recommendation for the implementation of underfloor drains in consideration of the conditions encountered in the investigation.	GHD Geotech	Underfloor drains are recommended underneath basements to provide drainage and safe guard from potential seasonal high groundwater levels, should they encroach the bottom slab of structures. Recommendation for underfloor drains is provided in the revised report

6.2.6 Basement Retaining Walls	Consideration	This section refers to addressing hydrostatic pressure where the basement walls extend below the groundwater table. Can clarification be provided regarding this statement given that an earlier section referenced seepage between 1.8 m and 4.0 m below grade but no static groundwater table to the depth(s) investigated.	GHD Geotech	Based upon the subsurface investigation and our interpretation of the information obtained during this program, the basement walls will not extend below the groundwater table of this subdivision. Detailed information regarding groundwater was provided in previous responses.
Supplementary Comments	Consideration	It would be of benefit to include the USCS soil description on the grain size analysis test result figures.	GHD Geotech	We have added the USCS soil description to the grain size figures.
	Consideration	The test pit logs indicate the presence of silty sand with no mention of clay. All of the borehole records indicate the presence of clay in the majority of strata encountered and the grain size test results on the till samples indicate the presence of trace clay. It is suggested that the authors review the results of the investigation to confirm if the predominant soil strata encountered in the test pits contain a clay component.	GHD Geotech	No hydrometer information was obtained during the test pit program to confirm. However, based upon testing of the till, a component of the till is comprised of clay.

Stantec - TIS				
2. Existing Conditions				
2.1 Study Area	1	Review of Section 2.1 Study area found that four study intersections along CR10 corridor were selected to be reviewed in this TIS report. It is recommended that a clarification on why the intersection of Tapley Quarter Line and Fallis Line is not included in this TIS be provided since it provides a direct access to/from Highway 115.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	This TIS selected two future horizon years in 2025 and 2030. It is recommended that an additional +5-year horizon, which is 2035 horizon, should be included to represent the full build-out + 5 years horizon.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
2.2 Traffic Data Collection and Existing Traffic Volumes	1	In Section 2.4 Traffic Data of the TIS report, it was mentioned that the 2018 turning movement counts for the CR10 & CR21 intersection were provided by the County of Peterborough and 2021 field traffic counts for the CR10 & Centennial Lane intersection were collected by the Consultant. However, the details of these data collections were not included in Appendix B Traffic Data and Data Projections in this TIS report. Also, this report indicated that the 2021 field traffic counts were used to estimate the intersection without the consideration of Covid-19 impact. It is recommended to explain more on how to get this assumption.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	Some minor existing traffic volume discrepancies were identified in the traffic volume exhibits, after comparing to the traffic counts in Appendix B. For example, in Exhibit 4: Existing AM Peak Hour Traffic Volumes (2021), at the Larmer Line & CR10 intersection. The volume of northbound left turn movement should be 9 vehicles/hour, not 6 vehicles/hour.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	3	In Appendix B - CR10 / Centennial Lane existing peak hour traffic volume table, since the traffic counts at this intersection were collected in 2021, the volume type in this table should not be “Projected”. Also, under Section 2.5 Existing Traffic Volumes of the TIS report, it was assumed Tower Hills South and Millbrook Community Centre were both fully built out by 2021. Thus, in this table, it is not clear if the 2021 traffic counts already include the trips generated by these two developments or not. We recommend further clarifications to be provided.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	4	In Appendix B - CR10 / CR21 existing peak hour traffic volume table, it shows that no Saturday Midday traffic counts were collected in 2018 by the County, thus, it is not clear how 2021 Saturday Midday projected traffic volumes were established.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	5	In this TIS report, “Millbrook Development Phase 2 – Traffic Impact Study for the Tower Hill Development Ltd.”” prepared by JD Engineering was mentioned several times as a reference to provide information (e.g., development names, site generated trips, etc.) on some developments which are adjacent to this proposed residential site. It is recommended to include excerpts of this report including referenced information to as an appendix in this proposed residential TIS report to provide reference for the details of trip generation based on these adjacent developments along with the trip generation volumes directly used in the volume tables in Appendix B.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	6	In Appendix B - CR10 / Fallis Line existing peak hour traffic volume table, for 2021 trip generation by Millbrook Community Center, there are some northbound left-turn trips but there are no eastbound right-turntrips. It is recommended to check if the volumes accurately used in the study.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
2.3 Synchro Traffic Operations Analysis	1	Please revise the name of Appendix C in this TIS report to “Synchro Reports Existing Conditions and Year 2025”.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	Based on the Synchro HCM reports appended to the report, a peak hour factor of 0.92 was used for all study area intersections. The report, however, does not clarify whether this factor was calculated from 15-minute turning movement counts or an assumed factor representative of the operations in the area. This issue also exists for all following future scenarios.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	3	By using Google Map’s “Measure Distance” tool, the storage lane length and taper length for the southbound left-turn movements at the CR 21 and CR 10 intersection are approximately 14m and 20m. Based on the Synchro outputs for the existing conditions in 2021 in Appendix C, the 95th queue lengths for southbound left-turn traffic are 16.9m, 29.8m and 18m during AM peak hour, PM peak hour and Saturday Midday peak hour. All are longer than 14m. The issue of potential vehicle spillback to the southbound through/right-turn shared lane was not identified in the TIS report.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
3. Future Background Conditions				
3.1 2025 & 2030 Traffic Volumes	1	As shown in Appendix B Traffic Data and Data Projections in this TIS report, for the calculation of total 2025 background volumes, the trips generated by Development “B” between 2021 and 2030 were added to the projected 2025 background volumes, including some minor values at the CR10 & Fallis Line intersection. It is recommended to provide more details to support how these minor site-generated trip volumes were calculated.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	As shown in Appendix B Traffic Data and Data Projections in this TIS report, the details of the site generated trips from the development “C” were included in “Traffic Impact Study Residential Development (West of CR 10)”, which was prepared by Asurza Engineers on June 11, 2021. The traffic volumes generated by this Development ‘C” in both 2025 and 2030 were illustrated in Exhibit 14 to Exhibit 17 of this West of CR 10 TIS, and they are different from the site-generated traffic from this East of CR 10 development shown in Appendix B. It is suggested that further clarifications on these traffic volume discrepancies should be provided.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.

3.2 Synchro Operations Analysis	1	Like the issue identified in Section 1.5, at the CR 21 and CR 10 intersection, based on the Synchro outputs for the future background traffic in 2025 in Appendix D, the 95th queue lengths for southbound left-turn traffic are 19.5m, 26.3m and 22.4m during AM peak hour, PM peak hour and Saturday Midday peak hour; based on the Synchro outputs for the future background traffic in 2030 in Appendix E, the 95th queue lengths for southbound left-turn traffic are 20.8m, 29.9m and 23.5m during AM peak hour, PM peak hour and Saturday Midday peak hour. All are longer than the existing 14m storage lane length. The issue of potential vehicle spillback to the southbound through/right-turn shared lane was not identified in the TIS report.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
4. Trip Generation				
4.1 Development Generated Trips	1	The trip generation in Table 5: Trips Rates and Trips Generation per Land Use of this TIS report showcases discrepancies in Directional Distribution (i.e., 50% entering and 50% exiting) applied for Multifamily Housing (Low Rise) – ITE Code 220 by comparing the ITE 10th edition Directional Distribution (i.e., 54% entering and 46% exiting) for this land use.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	Under Section 4.2 Site Trip Generation in this TIS report, the statistic for the Medical-Dental Office Building (Building D in Appendix A Draft Site Plan) is 25,758 SF GFA. However, in Appendix A, Building D's GFA shows 14,355 SF. It is suggested that further clarifications on this GFA discrepancy should be provided. If this is an error, trip generation in Table 7 and Exhibit 14 to Exhibit 19 of this TIS must be revised, as well as the following synchro analyses.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	3	A 20% internal trip reduction was shown for all commercial development In Table 5 Trips Rates per Land Use of this TIS report. Several pass-by reduction percentages were also shown for Supermarket, Fast-Food Restaurant and Gasoline Station developments in this table. It is recommended to provide more information on what references were used to get these percentages, as well as any related assumptions.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
4.2 Trip Distribution and Assignment	1	Under Section 4.3 Trip Distribution/Assignment in this TIS report, directional traffic patterns were estimated from the traffic data report obtained from the County and turning movement count reports included in the JD Engineering's TIS report. However, no details of trip distribution based on this information were included as an appendix in this TIS report. It is difficult to understand the methodology used to calculate all trip distribution percentages shown in Appendix F Trip Distribution Process without having access to the source information. It is recommended to further clarify the methodology applied in the calculation of the overall trip distribution.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
5. Total Future Conditions				
5.1 Traffic Volumes	1	As mentioned in Section 5.1 Future Traffic Volumes of this TIS report, future total traffic volumes for the two horizon years are obtained by adding the background traffic plus the trips generated by the proposed developments. Since some potential discrepancies may exist for the calculation of background traffic volumes and volumes generated by some site-adjacent developments, as mentioned in the previous sections of this letter, it is recommended to revisit and update total traffic volumes presented in Exhibit 20 to Exhibit 25, if needed.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	After comparing the Exhibit 7 Sketch of Developments Within the Area in both the West of CR 10 TIS and this East of CR 10 TIS, all developments in the study area for these two studies are the same, which means the total traffic volumes at the study intersections should be the same too. However, after comparing total traffic exhibits of these two TISs, traffic volume discrepancies were identified. It is suggested to review the total traffic volumes in this East of CR 10 TIS and revise them if needed.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
5.2 Synchro Operations Analysis - Total Traffic	1	Section 5.4 of the TIS report indicated that traffic signalization was introduced at the CR10 & Larmer Line and the CR10 & Fallis Line intersections in both 2025 and 2030. However, no traffic signal warrant analyses for these two locations were provided in this TIS. It is recommended to conduct the traffic signal warrant analyses for the 2025 and 2030 background and total traffic scenarios to confirm the potential traffic signal installation timeline, and add the analysis details, as well synchro outputs based on this improvement for these scenarios, in some new appendices.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	In Section 5.4 of this TIS report, some auxiliary lanes at the CR10 & Larmer Line and the CR10 & Fallis Line intersections were recommended for the total traffic scenarios. The left and right turn lane warrants for these lanes need to be provided. It will also be beneficial to see if traffic operational performance will be acceptable (e.g., LOS D or better) with the traffic signal installation only for all background and total traffic scenarios.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	3	Based on Exhibit 3: Existing Lane Configuration at Intersections in this TIS report, at the Fallis Line & CR10 intersection, the exclusive northbound left turn lane exists in 2021. Thus, it should not be a new auxiliary lane as recommended in Section 5.4 to improve intersection operational performance.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	4	Like the issue identified in Section 1.5, at the CR 21 and CR 10 intersection, based on the Synchro outputs for the total traffic in 2025 in Appendix G, the 95th queue lengths for southbound left-turn traffic are 24.6m, 33m and 25.6m during AM peak hour, PM peak hour and Saturday Midday peak hour; based on the Synchro outputs for the total traffic in 2030 in Appendix H, the 95th queue lengths for southbound left-turn traffic are 29.8m, 37.4m and 23.2m during AM peak hour, PM peak hour and Saturday Midday peak hour. All are longer than the existing 14m storage lane length. The issue of potential vehicle spillback to the southbound through/right-turn shared lane was not identified in the TIS report.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.

	5	As shown in in Appendix G and Appendix H, left-turn and right-turn storage lengths were inputted in the Synchro models. However, no left-turn/right-turn lane warrant analysis was provided in this TIS to support these lengths of the proposed auxiliary turning lanes. In addition, the Synchro outputs in these two appendices show that some of the 95th queue lengths for these turning movements during different peak hours are longer than the recommended storage lengths. This issue was not cleanly explained in the TIS report.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	6	In Section 5.5 of this TIS report, it is not clear on how to assign site-generated trips at each site access intersection in Exhibit 26 to Exhibit 31. It is recommended to provide more details on site trip distribution and assignment at site accesses.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
6. Roadway Geometry Review				
6. Roadway Geometry Review	1	The details on how to measure the stopping sight distances in the field for the two commercial accesses on CR 10 should be included, instead of only showing the measured lengths in this section.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
7.0 Conclusions and Recommendations				
Conclusion and recommendations	1	Under Section 6 Conclusions/Recommendations of this TIS report, the details for auxiliary lanes at the CR10 & Fallis Line and the CR10 & Larmer Line Intersections, as well as two commercial accesses on CR 10, were introduced. However, the proposed exclusive turn lane storage lengths and taper lengths for the CR10 & Fallis Line and the CR10 & Larmer Line Intersections are different from the storage lengths and taper lengths set up in the corresponding Synchro files, which were shown in Appendix G and Appendix H. It is recommended to confirm these lengths with the consistency anywhere in this TIS.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	2	Based on the above, this TIS report prepared in support of the proposed residential & commercial development (East of CR10) was found to contain undocumented assumptions and missing calculations, which may have an impact on the results of the intersection operations analysis of the study area intersections and future transportation requirements. As a result, the impact of the proposed residential & commercial development on the adjacent road network may not have been satisfactorily assessed. It is recommended for the Peterborough County to request a detailed comment response or an update to the TIS report from the applicant to address the issues brought to light in this Peer Review.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.

Canada Post				
Service Type and Location	1	Canada Post will provide mail delivery service to this development through Community Mailboxes	TBG	Noted.
	2	Detached and Townhouses dwellings: Will be serviced through Community Mailbox. The location of these sites are determined between my department (Canada Post Delivery Planning) and the Developers appointed Architect and/or Engineering firm.	TBG	Noted.
	3	If the development includes plans for (a) multi-unit building(s) with a common indoor entrance, the developer must supply, install and maintain the mail delivery equipment within these buildings to Canada Post's specifications	TBG	Noted.
	4	Please see attached linked for delivery standards: http://www.canadapost.ca/cpo/mr/assets/pdf/business/standardsmanual_en.pdf	TBG/VALDOR	Canada Post to be circulated at detailed design stage for mail box locations.
Municipal Requirements	1	Please update our office if the project description changes so that we may determine the impact (if any).	TBG	Noted.
	2	Should this subdivision application be approved, please provide notification of the new civic addresses as soon as possible	TBG	Noted.
Developer timeline, obligations and installation	1	Please provide Canada Post with the excavation date for the first foundation/first phase as well as the date development work is scheduled to begin	TBG	Noted.
	2	If applicable please ensure that any street facing installs have a depressed curb or curb cut. Contact Canada Post Corporation – Delivery Planning for further details.	VALDOR	Acknowledged and to be addressed at detailed design.
	3	Finally, please provide the expected first occupancy date and ensure the future site is accessible to Canada Post 24 hours a day	TBG	Noted.
	211	It is recommended that the owners contact Canada Post as completion draws near so as to finalize the location and compartment they will be assigned to.	TBG	Noted.

Cavan Monaghan - Staff Comments December 17, 2021				
Fire	1.0.	As development of buildings three or more storeys proceeds within the Millbrook area, a forecasted need of an elevated apparatus will become necessary. Currently, the longest ladder that the fire department has (only one of) would reach a third-floor window (if the ground is level) and no higher.	TBG	Noted.
	2.0.	An agreement with the applicant to install a sprinkler system in this development is required. This agreement will be necessary to state that that the hydrants will be operational and tested according to the NFPA standards for Fire hydrants prior to construction of any buildings and records supplied to the Director of Public Works and the Fire Chief	TBG	Noted.
	3.0.	The Township will consider four (4) storey developments in apartment blocks provided fire prevention and safety measures are implemented during construction. The current building height needs to be addressed in the official plan amendment application and Planning Rationale Report (PRR).	TBG	4-storeys now maximum height permitted by zoning through the MZO.
Parks and Trails	1	The proposed provision of parkland and trails is insufficient. In the absence of more details of the site, the provision of 0.02 hectares is not enough. As outlined in Section 8.12 (d) of the Township's Official Plan, land designated as part of the Natural Heritage System will not be included as part of the parkland dedication.	TBG	See TBG Planning Response letter. A 0.33ha parkland block has been added to the proposed development connecting Street 'A' and future Street 'D'. The park block also provides views into the natural heritage system. In total 0.36ha of parkland is proposed in the Draft Plan of Subdivision, which represents ~2.5% of developable land (not including the NHS and road widenings). Further, between the Fallis East and Fallis West sites total parkland dedication is above 5%. NHS lands are not included in parkland dedication.
	2	Block 81 identified as Parkland/Trails is a walkway from the Commercial Block to the subdivision. That is not enough parkland or a trail, additional parkland will need to be identified (versus cash in lieu).	TBG	Plan has been revised an commercial Block no longer proposed in same configuration. See response above.
	3	Township Staff ask that locating a possible viewing area/vista on the eastern extension of Fallis Line East be considered as part of that additional parkland. Connecting trails would also be an asset.	TBG	Please see Appendix 2 for the trails map. Park will act as a Vista Block as well.
	4	There is an obvious connection of any trails to access to Buckland Drive or the former rail trail which connects to the trail along Brookside Drive.	TBG	Please see Appendix 2 for the trails map.
	5	Reference to the CM Trails Master Plan can identify possible connections and logical access points.	TBG	Please see Appendix 2 for the trails map.
	6	Any trails should be 3 metre in width.	TBG	Please see appendix 2 for trails map, trails will be 3 m in width.
Roads/ Layout	1	Fallis Line will be constructed by the developer to 8.5 m. width, with standard municipal cul-de-sac at easterly end. Developer will be responsible to build this and any oversizing of road width will be the responsibility of the Township.	TBG	Noted. Will form part of detailed design submission.
	2	The road layout raises a specific issue of the proposed 90 degree corners at the bottom of Street 'A' designed to accommodate the grade. Street 'A' is designed at 6.5% which is steep.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	3	There is concern about having Street 'A' interfering with the Natural Core and Natural Linkage Zones at the southernmost portion of the property. There is also concern about extending the residential component from Coldbrook Drive from the south to the wooded area of Blocks 77 and 79.	GHD (EIS)/TBG	Please see revised draft plan as limits of development have been modified. A compensation plan will be prepared and submitted for ORCA's approval with the extent of disturbance to woodlands and their buffers. Preliminary mapping of the extent of wetland/woodland was prepared and can be identified in Attachment A
	4	The grade of Street 'A' from north to south is significant and there is concern about traffic as it approaches the extension of Coldbrook Drive, if the design does not change and the stream crossing is supported.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	5	The current layout and connection would require a water crossing which may or may not be supported by Otonabee Region Conservation Authority (ORCA).	TBG/GHD(EIS)	FSR and EIS has been updated based on new proposed watercourse crossing design.
	6	Road crossing and comments around the NC and NL should be addressed to ORCA. This includes more information and concern of crossing Baxter Creek.	GHD (EIS)	FSR and EIS has been updated based on new proposed watercourse crossing design.
	7	Staff identify the need to discuss the road layout connection based on a proposed extension of Coldbrook to Street "A". The proposed connection is not supported at this time. As an alternative, it is suggested that Street 'A' stop at Street 'B' and connect with Buckland Drive to County Road 10.	TBG	Street 'A' now terminates in a cul-de-sac rather than connecting to Coldbrook. A pedestrian block has been left to facilitate pedestrian connectivity. River crossing is necessary for Stormwater management and Sanitary Servicing matters as explained further in the FSR. Street 'B' terminates in a cul-de sac short of Buckland Drive. There are environmental constraints which limit the ability for Street 'B' to continue further westward. See EIS constraint mapping.
	8	At this point, the traffic report seems to be lacking information, Staff suggest that commercial block would be to have one entrance on County RD. 10, one on Fallis Line and one on Street 'A'.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	9	Consideration should be given to moving Street 'A' to run along the eastern boundary of the Commercial Block rather then the residential backyards as illustrated now. This would reduce potential land use conflicts regarding compatibility issues.	TBG	No longer relevant given revised subdivision design.
	10	As it stands, there is no connection (other than a walkway) between the residential and commercial blocks. This is likely to cause traffic concerns as people try and access the commercial block off County Road 10 or the proposed Street 'A'.	TBG	No longer relevant given revised subdivision design.
	11	Given the slopes of the property, from north to south, there is concern that the commercial block will require a retaining wall. If so, more details need to be provided.	VALDOR	No longer relevant given revised subdivision design.
	12	A conceptual grading plan is required for the commercial block to better understand the challenges of the site and physical layout of this part of the proposal.	VALDOR	No longer relevant given revised subdivision design.
	13	Fallis Line East if extended, should be a cul-de-sac and keep in mind any possible connections to the property to the north side of Fallis Line East.	TBG	Noted and to be incorporated into detailed design.
	14	Currently, the lots identified in the FD areas in Block 77 as well as 44-50 are not supported because of concern about water crossing (as other issues noted above).	TBG	See FSR for a more thorough explanation of need for water crossing as related to Stormwater management and sanitary servicing. Note that limits of development in south-eastern portion of the site (former Block 77) have been reduced per ORCA comments.
	15	On the commercial block, there is concern as to how two (2) access points will be accommodated off County Road 10. Given the installation of a controlled intersection at Fallis Line and County Road 10m how will 2 access points work with controlled left and right hand turns into the commercial block?	TBG	No longer relevant given revised subdivision design.
	16	Street lighting should match the pattern and spacing already accepted within the other subdivisions within the Township (i.e., decorative street lighting).	TBG	Noted. To be specified at detailed design.

	17	Street lighting needs to match up with sidewalk placement throughout the subdivision (i.e., on the same side to illuminate walkways).	VALDOR	Noted. To be specified at detailed design.
	18	Consider connection to lands zoned commercial south of this subject property, fronting on County Road 10.	TBG	Connection to future commercial lands to the west would increase traffic on the proposed local roads.
	19	Reconsider road interconnection.	TBG	Connection to future commercial lands to the west would increase traffic on the proposed local roads.
	20	there are also questions about TIS and auxiliary lanes at Larmer Line.	ASURZA	The TIS is currently undergoing revisions to address changes which align with the approved MZO. A formal response letter will be provided in May.
	21	Each dwelling must an attached garage and a minimum of two external parking spaces with a minimum length of 6 metres to accommodate larger parking requirements.	TBG	The proposed dwellings will meet the requirements outlined in the comment.
Stormwater	1	More details are required about the SWM pond on Block 79 with regards to sizing and grading.	VALDOR	Please refer to the FSR Report (SWM Section) and Drawing PSG-1 which shows contours and details related to the Forebay, Forebay cell. Outfall, emergency spillway. Access etc. as well as all the design, sizing information.
	2.0.	More information is needed from the FSR regarding stormwater and more engineering details for the SWM especially if southern residential lots don't proceed	VALDOR	Refer to above response. There is no affect on the residents to the south. The existing elevations are matched at the property line.
FSR and Water & Waste Water Services	1.0.	Currently the functional servicing does not provide adequate information on sanitary servicing, water or storm. This relates to the grade of the pipes, velocities and associated preliminary grade of the road.	VALDOR	The pipes will generally follow the road gradient. The road gradient is indicated on Drawing PSG-1 where overall the road gradients are within Township design criteria of 0.5-6.0%. We will provide plan/profile drawings and design sheets at detailed design stage to ensure that all sewers and watermains are designed in accordance with Municipal standards.
	2.0.	Sewer & water capacity – Township Staff will discuss this with the consultant preparing the Master Servicing Plan to confirm capacity for plan of subdivision and commercial.	VALDOR	Please provide our office with additional details on the Master Servicing Plan. Based on the update to Council back in October 2021 there is some reserve capacity available in the WWTP and water system to accommodate more development.
	3.0.	The development cannot proceed until such time as the Township has confirmed through its Water/Wastewater Master Servicing Study there is sufficient reserve (allocation) of water and wastewater capacity.	VALDOR	Noted.
	4.0.	If there is sufficient water/wastewater reserve (allocation), development should progress in a phased approach. A phasing plan will be required.	VALDOR	Phasing Plan to be further reviewed/discussed in the near future. Note distinction between Future Development Blocks in the Draft Plan and lotting in the proposed Master Plan; which inherently creates a phased approach.
	5.0.	Township supports oversizing servicing, if available, to follow up along Coldbrook Drive but through horizontal drilling versus proposed Street 'A'. Any servicing should consider expansion in FD Block 75 as well as any possible development on the north side of Fallis Line East.	VALDOR	Acknowledged. Oversized sanitary sewer will be extended along Street A in order to accommodate future development lands.
	6.0.	Given the grade of the property, is a pumping station required for servicing the commercial block or lands on north side of Fallis Line East?	VALDOR	Given the slope of the land the sanitary sewer can be made deep enough to accommodate a portion of the development north of Fallis Line. A pumping station is not required to service the proposed development.
	7.0.	consultant needs to verify sizing of proposed water and sanitary services.	VALDOR	Sizing of services will be confirmed at detailed design stage. The watermain sizing will vary between 150mm to 250mm. Connections are available at Fallis Line and Nina Court to the south. The existing 525mm sanitary sewer on Nina Court (which is oversized for this development) will be extended northerly on Street A to accommodate the subject site as well as future development north of Fallis Line. A 200mm sanitary main will service the smaller local streets within the development and connect to the oversized Street A sewer.
	8.0.	There are questions about the identification of "sump pumps" for residential units. Given the significant slope of the property, why is this required?	VALDOR	Sump pumps will not be necessary for these lands. The FSR was updated accordingly.
Planning	1.0.	Record of Site Condition will be needed for the former rail trail lands.	GHD Geotech	It is GHD's position that a Record of Site Condition (RSC) is not required for the former railway line. The historical rail line has been used as a parkland / agricultural property use for about 60 years as a private trail for recreational activities. The majority of the trail on site will remain natural heritage and road network with only 2 lots to be developed for residential purposes where the former rail line was located. Based upon this current property use and the future use after development, it is our opinion that a RSC is not required. Based on the exemption under s.168.3.1 (1) (a) of the Act, the property can be changed from a railway line to a trail used for recreational activities without an RSC. Regardless of this exemption, it is our professional opinion that an RSC does not apply since the development is changing property use from agricultural and / or parkland to residential use. An RSC is not required for this property use change. A follow up site reconnaissance was completed of the historical rail line corridor to confirm the absence of fill, rail line ties or ballast material. It is our understanding that the rail line was abandoned in the early 1960s. On either side of the former rail line is either forested with tributaries of Baxter Creek or agricultural lands. No stressed vegetation was observed. The rail line is built up minimally and in some areas is not built up at all. No rail ties or rail ballast material was observed within the rail line right-of-way. The built up material observed was predominantly a dark brown topsoil or some areas of sand and gravel material. No deleterious fill, ballast or discoloured material was observed. Based upon our observations, the likelihood of significant impacts below the former rail line appears low. It remains our opinion that the former rail line presents a very low level of concern from an environmental site assessment perspective and is suitable for development without an RSC and does not contribute to an APEC at the Site.
	2.0.	Detailed engineering and grading will be required after draft plan approval has been received.	VALDOR	Acknowledged
	3.0.	Concern of residential lots identified in Natural Heritage System on east side of Street 'A'.	TBG/GHD(EIS)	See TBG Planning Response letter.
	4.0.	There needs to be a better justification of the proposed extension to Coldbrook Drive and connection to Street 'A'.	TBG	See TBG Planning Response letter.
	5.0.	Concerns with EIS and environmental elements – NC, NL and NHS impacts. Crossing of Baxter Creek. More information and discussion with ORCA is required.	TBG/GHD(EIS)	See TBG Planning Response letter.
	6.0.	Proposed commercial block is supported but is being proposed in a reduced commercial zone "footprint". The PRR needs to justify why commercial is reduced when the GMS identified need for additional employment lands. This proposal reduces so that it can accommodate residential. This needs to be better explained and justified.	TBG	See TBG Planning Response letter.
	7.0.	There has to be a balance of commercial, employment and residential. This has to be better explained in PRR.	TBG	See TBG Planning Response letter.
	8.0.	How will affordable housing issue be addressed? Planning Justification Report indicates that the subdivision has been designed with a range of single-detached and townhouse dwellings, more details are required for townhouse blocks on the latter proposed development as well as any information regarding affordable housing.	TBG	See TBG Planning Response letter.
	9.0.	With regards to PRR, questions about: o Housing, concern of severing a Key Natural Heritage Feature (not allowed in OP) and demonstration/justification of transportation uses, parkland dedication, impacts on NH policies (NC/NL).	TBG	See TBG Planning Response letter.
	10.0.	PRR has to address the ultimate development design with medium density residential units and proposed five (5) storeys.	TBG	See TBG Planning Response letter.

	11.0.	The proposed development will adjust the Millbrook Settlement Area by bringing some agricultural land to the subject development. While the Planning Rationale Report (PRR) identifies this, more information and a greater justification needs to be provided to address why the expansion and why here? Again, this expands to bring agricultural into the Settlement Area for residential but the entire site is reducing the commercial for residential and then brings more land in for residential without justifying the "trade off" here.	TBG	See TBG Planning Response letter.
	12.0.	The conceptual master plan identifies a range of housing including possible apartment dwellings of 5 storeys. OP only permits 3 storeys and while 4 storeys was just approved for Towerhill North, why 5 storeys and why here?	TBG	See TBG Planning Response letter.
	13.0.	township will consider four (4) storey developments in apartment blocks provided fire prevention and safety measures are implemented during construction (see earlier comment). The current building height needs to be addressed in the official plan amendment application and PRR.	TBG	See TBG Planning Response letter.
	14.0.	PRR references the CM Zoning By-law 2004-62 which has been replaced by 2018-58, as amended. There is also a spelling mistake in that title 4.6 of PRR.	TBG	See TBG Planning Response letter.
	1.0.	PRR needs to address natural heritage policies in OP with regard to proposed development pattern.	TBG	See TBG Planning Response letter.
OPA Application Form	2.0.	Additional comments on OPA application form may be forthcoming.	TBG	See TBG Planning Response letter.