



File Numbers: D07-16-19-0026, D02-02-19-0123

December 19, 2019

Mike Dror
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Toronto, ON M5E 1M2

Sent via e-mail to mdror@bousfields.ca

Dear Mr. Dror,

Re: Draft Plan of Subdivision and Zoning By-law Amendment – 7000 Campeau Drive

The following review comments are provided in response to the first submission of the Draft Plan of Subdivision and Zoning By-law Amendment Applications for the proposed residential development at 7000 Campeau Drive. Please coordinate the changes made in response to the comments below across all plans and reports as applicable.

CITY OF OTTAWA

General

1. It is understood there is an application in Superior Court for an order that ClubLink be required to offer to convey the golf course to the City at no cost in accordance with ClubLink's contractual obligations flowing from the May 26, 1981 agreement between Campeau Corporation and The Corporation of the City of Kanata. In the event this issue cannot be determined in a timely manner, the City also reserves its right to consider seeking injunctive relief in form of an order requiring ClubLink to withdraw this application pending a determination by the court.
2. Based on the outcome of the court proceedings, an Official Plan Amendment application may be required to remove specific sections from the Official Plan that refer to the 40% agreement.
3. The City regularly inserts a condition of draft approval that the zoning for a proposed plan of subdivision is to be in place prior to registration, as opposed to being in place prior to draft approval. Thus, the enactment of the zoning by-law regularly follows after draft approval.

4. Please be aware that the City is having the “Kizell Drain Erosion Assessment” peer-reviewed. Once these comments are available they will be provided under separate cover.

Planning & Urban Design

Draft Plan of Subdivision / Master Plan

5. As per Section 51(17)(f), the Draft Plan must illustrate the approximate dimensions and layout of the proposed lots. The Plan as submitted does not illustrate any lots to be developed; only blocks are shown on the Plan.
6. Please provide the lotting layout for the proposed single and semi-detached lots so that a full review of the proposed development and relationship to the existing residential uses can be completed. Further comments regarding the proposed lotting will be provided once the complete draft plan of subdivision is submitted. The following are some specific details that will be reviewed at that time:
 - a. It appears that there are significant grade changes in some areas from the proposed streets to the rear yards of some of the residential blocks. Please provide details on how the significant grade changes will be reconciled to ensure that privacy, overlook, drainage and compatibility will be achieved with the existing residential development.
 - b. Lot area, frontage, setbacks and lot coverage will be reviewed to determine compatibility with the existing residential development.
 - c. Appropriate locations of mid-block connections and open space.
 - d. Once detailed lotting information is provided, a full review of the proposed architectural concepts can also be provided. Of particular note, the surrounding community must be studied to determine the dominant use of materials.
7. The vision stated in the Master Plan is to “Create a community that integrates with the surrounding residential neighbourhoods and develops a cohesive network of year-round public open spaces and parks”. More analysis and work needs to be done on the Master Plan to achieve this vision. The Master Plan does not clearly communicate the design process of layering features, constraints and opportunities of the site while considering the surrounding context. In addition, the open space network requires further analysis to ensure it is cohesive in its implementation. It would be appropriate under the circumstances to study the surrounding community context in greater detail so that it can be better reflected in the Master Plan and subsequent Draft Plan of Subdivision.
8. It appears that the existing topography of the existing community (including elevated rock outcrops, wooded areas and steep grades) were not given enough consideration

when proposing the current layout. More attention to incorporating the proposal into the existing community by respecting the topography and natural areas is required.

9. Pedestrian and cycling connectivity - please provide details on how the connections to the existing networks will be achieved including existing multi-use pathways (MUP), pedestrian crossings and existing mid-block connections. It appears that a MUP is only being proposed along Campeau with no other (off street) cycling facilities. Please incorporate MUPs throughout the development and convert any proposed pathways into MUPs.
10. Please be aware that the Owner's Certificate with signature is not required for draft approval, however it is a requirement for registration.
11. Please remove the parking schedule.
12. Please add the file number (D07-16-19-0026) on all plans, as shown below.



Density / Uses / Compatibility

13. The Planning Rationale indicates that the net density is 39.7 units per hectare. Please confirm the existing density of the surrounding community to understand the relationship between the two.
14. Relocate Block 73 (Medium Density) away from the existing residential properties along Coulson Court. Block 73 could be relocated to Blocks 49 to 54 and eliminate the need of a window street along Campeau Drive. Block 73 could be replaced with a low-rise townhouse block which would be more compatible with the one-storey townhouses on Coulson Court.
15. The residential blocks closest to Campeau Drive are the most desirable location for the densest residential uses (back to back townhomes, stacked townhomes and medium density uses) with the least impact on the existing community and the closest location to the Town Centre. Further analysis of Blocks 47 to 59, 70 and 71 are required in this regard. Areas which back onto existing townhomes are also areas of opportunity for denser residential uses; however, more detailed information is required (proposed

frontage, lot area, lot coverage, unit types etc.) to ensure compatibility with the existing residential community.

16. It is unclear why Blocks 60 and 69 are proposed for townhouses when the surrounding proposed and existing uses are single detached lots. Block 60 proposes executive towns that would back onto existing single detached homes on Stonecroft Terrace. Provide rationale or revise accordingly.
17. Many of the existing single detached lots in the community are greater than 15 metres (49 feet), with numerous lots measuring 21 metres (69 feet). How are the proposed lot widths (ranging from 9 metres to 13 metres) for single detached homes compatible with the existing community? Provide rationale or revise accordingly.

Open Space Network

18. It is questionable as to how the 3-metre landscape buffer at the rear of properties will be successfully implemented over time. Please provide explanation and details on the use of the buffer, as well as clarify the long-term use and intended ownership of these buffers.
19. While the Connectivity Section of the Urban Design Brief provides an overview of the pedestrian and cycling connections, key destinations are not identified. Key destinations both on-site and off-site must be included in this Section, for example, adjacent schools, parks, community centres and the Town Centre. These destinations will provide a better understanding of the interconnectedness of the proposed development with the existing surrounding communities. For example, Block 19 and a portion of Block 20 may be better suited as an expansion to the existing Craig Park. This should be reviewed with the Parks Department to confirm.
20. Please provide details on the Open Space Trails – the Open Space Trails must be Multi-Use Pathways where both cyclists and pedestrians can use the network. Please also include information on existing pedestrian crossings in the area.
21. The Open Space network also requires more analysis with respect to its configuration and connection to the existing network. There are some areas where the residential blocks are very deep but only includes the 3-metre buffer and other areas where the residential blocks are more uniform with an Open Space Block behind the residential block. When a complete Draft Plan of Subdivision is submitted with detailed lotting, the Open Space network requirements will be able to be further refined.
22. Please overlay the proposed Grading Plan, Tree Retention Areas (contained in the Tree Conservation Report) and proposed Park locations on the Subdivision Plan to provide a complete overview of the development and to ensure that there are no conflicts between these areas, proposed uses, the relationship to the residential uses and 3 metre landscape buffer. For example, the Tree Retention Area identifies Potential Significant Woodlot D, which is currently located where the active uses of the proposed

Neighbourhood Park are illustrated. The TCR notes the conflict; however, this must be noted on the Master Plan and in the Urban Design Brief and/or Planning Rationale.

23. Why does the Draft Plan propose to block the route to Craig Park? There is an existing path through the golf course from Knudson Drive to Craig Park, which allows access to and from Stephen Leacock Public School. The Draft Plan only shows Block 70 from Knudson Drive and Block 118 leading to Street No. 23, but no connection to Craig Park.

Street Cross-sections / Street Network

24. As stated in the Pre-Consultation meeting minutes (April 9, 2019), the minimum right-of-way width to be considered will be 18-metres for local roads and 24-metres for collector roads (if proposed). Please update the draft plan accordingly.
25. The Master Plan section in the Urban Design Brief highlights the 20-metre proposed street as the spine of the community; however, it appears that street trees may not be able to be planted. In addition:
 - a. The cross section is lacking the multi-modal needs (cycling) and will need to be designed such that it incorporates traffic calming measures and design details (raised intersections, pedestrian crossings etc.) that clearly provides a tree-lined community street that is characteristic of the surrounding community.
 - b. The alignment of Street 1 from Campeau seems to unnecessarily create a “pinch point” in Block 88 and is almost a straight alignment from Campeau to Knudson. Further rationale for the alignment needs to be provided so that an analysis can be completed.
26. The conceptual street cross sections are problematic as they propose sidewalks and the street trees are to be planted over top of the utility trenches or too close to these trenches. The draft plan should provide a larger ROW to accommodate the street trees. Please revise the draft plan accordingly.

Environmental

EIS - Combined Environmental Impact Statement & Tree Conservation Report Kanata Golf and Country Club Redevelopment

Significant Woodlands

27. The EIS does not provide an assessment of significant woodlands that meets the City of Ottawa requirements as they are outlined in the Council-approved Significant Woodlands: Guidelines for Identification, Evaluation and Impact Assessment. The assessment in Section 3.3.4 of the EIS does not address the concepts of ecosystem services as described in the City Guidelines. Please revise to provide an analysis that addresses these aspects, more detail is available in Section 6.4.4 and Section 7 of the

Significant Woodlands Guidelines. [The Significant Woodlands Guidelines were approved by Council on March 6, 2019.]

28. Woodlot A – the EIS indicates on pg 41 that “... *the majority of the area that is currently occupied by Woodlot A and Woodlot B is devoid of tree and shrub cover in 1976.*” A portion of Woodlot A north of the road appears to have tree cover in the 1976 air photo. This suggests that this is part of a significant woodland as well as the other three woodlots. Please revise to include the portion of Woodlot A in the analysis of significant woodlots.
29. The EIS indicates there are three forests on the proposed development that qualify as potential significant woodlots under the amended City of Ottawa criteria for the urban area. Please provide detail rationale as to why they are being suggested as potential when it is indicated in the EIS that they satisfy the criteria for significant woodlands in the City of Ottawa.
30. Please provide a plan or figure that shows the environmental constraints as they relate to the proposed development. The “Draft Plan of Subdivision – Tree Retention Areas” shows some blocks that are labeled “Portion of Potential Significant Woodlot E, C and D” however it is not clear now much of the significant woodlot is being retained. [EIS guidelines Section 3.3.1]
31. Please relate the forest communities in figure 9 with those described in EIS Section 3.2.4.

Watercourse / Waterbody

32. Stormwater ponds described in the EIS – Confirm where all ponds drain. Do all ponds have an ECA or CofA approvals from MECP or its predecessor? Please provide details.
33. The EIS describes six stormwater infiltration/conveyance swales within the site. The photos provided in the EIS Appendix A indicate these features appear to be in a natural condition. And what? Please provide design drawings or CofA or ECAs available for these features.
34. Please map the location of the ponds and conveyance features on the figure. Indicate where the photos in the Appendix A were taken.
35. Some of these “infiltration/conveyance” appear to be wetlands. Please describe whether they meet the definition of a wetland under the ELC.
36. The EIS indicates there are no “natural wetlands” present, however several wetlands appear to be present, some are evident in the 1976 air photos. The swale that is

described as passing through Woodlot E appears to be present in 1976, suggesting that it was present prior to the construction of the subdivision and golf course. Often existing natural features are used during subdivision and golf course design and construction and water is provided to them. The fact that this feature pre-exists site development and has no outlet suggests that it may be a natural feature and it could be part of the natural woodlot as per OP Section 2.4.2 which indicates wetlands in association with significant woodlands are part of the natural heritage system. Further investigation is required.

Species at Risk

37. The MECP will need to approve the extent of habitat present on this site as per OP Section 4.7.4 policy 4. Some further questions are presented below as they apply to some species discussed in the EIS. There is additional work required.
38. Whip-poor-will – please explain why 5 of the 9 survey locations for whip-poor-will were not located on the lands subject to the application?
39. Blanding’s turtle – the MECP will need to approve the findings as Blanding’s turtles have been reported in the area.
40. Little Brown bat, Northern Long Eared Bat, Tricolored Bat, Eastern Small Footed Myotis – please confirm that the “Bats and Bat Habitats: Guidelines for Wind Power Projects” is applicable to this site as the proposed subdivision is not for a wind power project and Guideline predates the ESA designation of bats.
 - a. Further, please explain the reference to interior habitat as we are not aware of that requirement for these four species and the Significant Wildlife Habitat Technical Guide (which is referenced by the above referenced Wind Power Guidelines) indicates that forest edge is an important aspect of their habitat.
 - b. The Wind Power Guidelines reference the presence of Mixed Wood Forests or Deciduous Forests (no reference to interior forest habitat within those descriptions) and the density of snags / cavity trees per hectare. If the snag / cavity tree density is greater than 10 snags per hectare of trees greater than 25 cm dbh the Guidelines indicate it is a candidate for maternity colony roosts. Please provide this analysis.
 - c. The Windpower guidelines indicate that the candidate roost trees should be monitored as per the numbers provided in the guidelines (based on the number of roost tree present). Please revise accordingly.
 - d. Please confirm if any of the buildings present in the site have any evidence of maternal bat colonies?

Significant Wildlife Habitat

41. Amphibian – the survey indicates that American Bullfrogs were observed in both SWM ponds. Were they confirmed as breeding? Please expand on this, as confirmed breeding is considered significant wildlife habitat.
42. Stormwater Ponds and other water features present must be assessed against the significant wildlife habitat criteria.
43. Large Mammals – the EIS is silent on the use of the site by larger mammals such as deer, coyotes and foxes. The EIS needs to assess whether the site qualifies for significant wildlife habitat.
44. Animal Movement Corridors – the site is located between the Bill Teron Park and the Beaver Pond and may provide a movement corridor when combined with forested blocks to the north of the golf course. Please assess.
45. Section 3.8 indicates there is no significant natural heritage features found adjacent to the site, however mapping undertaken suggest significant woodlands are present to the north (Beaverpond Park and Walden Park) and to the south (Bill Teron Park). There is also a potential linkage along the east of the subdivision from Beaver Pond/Kimmins Court Park south to the Robert Gray Park. Please expand and address this in the EIS.

Section 4.1.1 Significant Woodlands Impact

46. The assessment needs to follow the direction in the significant woodlands guidelines as described previously (the assessment must also include part of Woodlot A). The rationale provided that “although Woodlots C, D and E have the potential to qualify as Significant Woodlots under the social criteria, they provide comparatively little ecological value and are not recommended to be retained for conservation purposes” is not accepted as it is not the Council approved policy. The policy indicates that woodlot and tree preservation is a priority and it may be necessary to mitigate or compensate for the lost ecosystem services as per the guidelines. The EIS outlines some recommended tree retention measures; however, it does not indicate how these measures mitigate or compensate for the loss of the significant woodlots. For example, the area of tree retention/planting are framed as “opportunities” for tree preservation and wherever feasible, this falls well short of the method outlined in the Council approved Significant Woodland Guidelines.
47. The 3-metre buffer has not proved to be enough space to allow for tree preservation on other developments. Please indicate how this will work, issues to be addressed is grade change and drainage within the Critical Root Zone of these trees. Successful examples in the area are in the range of 10 metre (e.g., opposite 100 Walden) or 27 metre (e.g., opposite 148 Walden). The 3-metre buffer is on private land, no long-term preservation is likely as such should not be included in the assessment of tree mitigations.

48. EIS Section 4.3 – the forest community on Walden Park is considered a significant woodland and as such needs to be considered and assessed in this section.
49. EIS Section 4.4 –if an overall benefit permit is required, more detail is required as to what is proposed prior to draft approval.
50. Comments on the EIS Section 4.4.2/4.4.3 are not provided until the presence of deer, coyotes, etc. is properly addressed.
51. Section 5.0 – the cumulative impact on the forest within the local/regional context needs to be supported quantitatively. The ability of the mitigation measures described in the EIS section 4.1 to address the loss of forest cover have not been demonstrated in the EIS. Please assess against the regional context of Kanata North and/or Kanata Lakes/Beaverbrook area.

Other Comments

52. Blocks that are proposed to preserve woodlands will need to be zoned O1R.

Forestry

53. A tree permit is required prior to any tree removal on site. The tree permit will be based on an approved Tree Conservation Report (TCR) – the August 2019 TCR portion of the McKinley EIS/TCR has not been approved.
54. Block 91 on the Draft Plan of Subdivision shown in the EIS (page 8) is Block 88 on the paper copy Draft Plan. Please revise.
55. Grade change on a development site is a major reason trees cannot be retained. Grading within the Critical Root Zone of retained trees must not occur unless the individual tree has been evaluated against the predicted grade change near it. The TCR makes no reference to how the predicted grade change will impact the ability to retain trees. More detail must be provided on the grading near retainable trees.
56. Page 2 – grading and site works associated with storm water management blocks seldom allow for tree retention.
 - a. More information on how trees will be retained in the storm water management blocks is required.
 - b. Provide the percentage area specific to storm water management blocks; it should be separated from the 27% estimate of the gross area for tree retention.
57. Page 11 of the TCR states that smaller planted stands and individual trees with a diameter of less than 50 cm were not documented. Smaller trees regardless of origin often present ideal candidates for retention, especially on site where the larger critical

root zone of a more mature tree may be compromised by development. All individual trees or small stands of trees must be documented, and their GPS position determined and plotted.

58. 3.2.3 Tree Stands and Large Trees – This is a good way describing smaller stands; however, the collection of general tree health information is required, especially for tree stands within potentially retainable areas. Please expand.
59. 4.1.3 Transplanting and Replanting – Transplanting trees is an excellent means of retaining existing tree cover; however, on large sites like this, the potential to transplant trees often surpasses the ability to transplant them once development begins. There will be many healthy trees that could be transplanted, but unless they are moved from the development lands into a protected area for future transplanting during the landscaping phase, it is unlikely that it will be successful on a significant scale.
 - a. Information on transplantable trees must be provided – individual trees must be assessed for their ability to survive transplant activities – considerations for size, site conditions, species, and vigour need to be provided.
 - i. Provide, address or identify the following:
 1. Identify transplantable trees.
 2. Identify future transplant locations during the planning phase – coordinate with servicing requirements to prevent conflicts. Overlay the servicing plan onto a plan showing future transplant locations. The transplanting operator will need an operational zone around the trunk to ensure that the tree spade has enough clearance from conflicts. Careful planning is required to avoid operational delays.
 3. Identify a temporary area where trees from around the site could be relocated and protected while development occurs in other areas.
 4. Transplant trees prior to development - Logistical considerations for time of year need to be given.
 5. Re-transplant trees into final location during the landscaping phase - Logistical considerations for time of year need to be given.
60. Tree Retention Requirements:
 - a. 3-metre property buffer- the word buffer means different things to different people; experience has indicated that changing the reference to 'tree retention area' (or, tree retention strip) is more appropriate), Please revise:

- i. Consideration for a larger buffer must be given – 3 metres is narrow and may present retention challenges for larger trees.
 - ii. There is not enough information to determine if the proposed 3-metre property buffers are going to retain many trees.
 - iii. Inventory all trees in the proposed 3-metre property buffer, as well as trees that are located a minimum of 2-meters away from the proposed 3-metre buffer (5-metre minimum from the property line) – species, diameter, health status, GPS coordinates will need to be collected.
 - iv. Summarize the buffer inventory in the TCR and provide a plan(s) showing precise location of all potentially retainable trees – this will be necessary for the issuance of a tree permit where the retained vs. removed trees and stands of trees must be clearly delineated.
 - v. Show any grading or excavation work that is required within the Critical Root Zone of all trees in the buffer – determine the portion of the critical root zone outside the buffer that will be disturbed.
- b. Larger treed area – development requirements along the edge of retained tree areas can result in the need to remove individual trees within the protected area.
- i. Determine any grading or excavation requirements along the boundary of the retained treed area and the development site.
 - ii. Evaluate potential tree health impacts on all trees with a critical root zone that extends into the developable area.
 - iii. Identify all hazardous or severely declining trees within one tree length of the development site; these trees may need to be selectively removed during the tree clearing stage.
 - iv. Identify any trees with a significant lean towards the development site – evaluate these trees to determine if they should be selectively removed during the tree clearing phase.

Natural Systems

61. The applications for a Zoning By-law amendment and plan of subdivision do not meet the City's policies for significant woodlands. The proposed development would negatively impact significant urban woodlands. The proponent has not provided the analyses of alternate development concepts required by the Significant Woodlands Guidelines (including a baseline "no impact" scenario) in order to demonstrate a net benefit of the proposed changes to the community. Without these analyses, Natural

Systems staff cannot evaluate or support the proposed Zoning By-law amendment or plan of subdivision.

Parks

62. The parkland area calculation for the current plan on page 7 of the Combined EIS & TCR inaccurately reflects the amount of parkland provided. The open space, ponds and residential buffers are not to be included in the parkland calculation. The site has a density greater than 18 dwellings per net hectare. As per the City of Ottawa's Parkland Dedication By-law No. 2009-95, parkland is to be conveyed to the City at a rate of one hectare for every 300 units. For this development, the amount is equivalent to 5.01 hectares whereas 4.36 hectares are being provided.
63. The neighbourhood park does not have a minimum 50 per cent street frontage as required by Section 2.4.3 of the Park Development Manual. Most of the park is located behind existing and proposed residential backyards and lacks natural surveillance. Its configuration may limit the inclusion of active recreation (sports fields) within it. Please provide the area of the southern portion of the park intended for active use so that its usability can be properly assessed.
64. Please provide the area of each parkette.

Transportation

Transportation Engineering Services

Errors in the Existing Conditions

65. Element 2.1.2 - Existing Conditions, Existing Road Network: Correct Table 1 (4th Row) to indicate that Kanata Avenue continues as a Major Collector north of Campeau Drive. Also describe Weslock Way and Beaverbrook Road in Table 1.
66. Existing Transit Network: Show Route 168 in Figure 3.
67. Existing Cycling/Pedestrian Networks: Describe existing off-road pathways and connections. The reference to Figure 5 claims Figure 5 is the "existing pedestrian network" whereas Figure 5 is actually the "existing pedestrian context", please clarify or correct.
68. Element 2.2.3 Horizon Years: Confirm build-out (or full occupancy) year is 2024. This is inconsistent with Point #10 in the Summary and Conclusions section, which indicates occupancy is anticipated to be 2025. If full-occupancy is anticipated in 2025 then horizon years should be 2025 and 2030. Please confirm and revise.

Element 2.1.3 Planned Conditions, Rapid Transit and Transit Priority Network

69. Historical Collision Data: Please provide a further breakdown of the high-collision intersection of March Road / Campeau Drive to see if there are any discernible collision patterns (direction, collision type, etc.). Provide collision data for the roadway segment of Campeau Drive between Kanata Avenue and Knudson Drive.

Element 3.1.1 Trip Generation and Mode Shares

70. B. Estimate Total Development-Generated Person Trips: Table 3.13 from Trans should be used to calculate person trips. Please use only the auto driver (not combined with auto passenger mode share). Combining the two modes underestimates person trips.
71. C. Identify Existing Mode Shares for Traffic Assessment Zones: In Table 12, auto passenger mode share is consistently higher than rates identified in the 2011 O-D survey while transit rates are slightly lower. In addition, the sentence below Table 12 says the transit mode share is typically 20-25% of total trips, but this is inconsistent with what is shown in Table 12. The "other" trips should not be combined with the passenger trips but rather stand alone. Please confirm Table 12 is accurate.
72. D. Set Future Mode Share Targets for the Development: This sections states "in the future, it is expected that mode shares will stay generally the same", yet transit and auto passenger mode shares in Table 13 are inconsistent with Table 12. In addition, the walking mode share should stay the same or increase in the future. Please explain/justify this inconsistency.

Element 3.1.3 Trip Assignment

73. Justify why Beaverbrook-Teron-March and Kanata-Goulbourn Forced Road were not considered as routes to/from the north, especially for the more northerly areas of the proposed development.

Element 4.1.1 Design for Sustainable Modes

74. Provide a multi-use pathway (MUP) through the stormwater management (SWM) facility west of Weslock Way and north of Street No. 16 to connect Street No. 16 and Slade Crescent.
75. Provide MUPs through the SWM facility east of Weslock Way and north of Beaverbrook Road to connect Street No. 16, Street No. 18, and Street No. 23. Provide connections to Weslock Park (north of SWM facility) and Holly Acres Park (east of SWM facility).
76. For access to transit stops on both sides of the road (inbound and outbound), please provide a method (pedestrian crossover, all-way stop, or other) for pedestrians to cross the road at the following locations: Street No. 16 / Weslock Way; Street No. 1 /

Street No. 6 / Knudson Drive; Knudson Drive at the proposed MUP extension of Street No. 9; and Campeau Drive at Street No. 1 or Street No. 7 or Street No. 11.

77. Please provide a sidewalk on the north side of Knudson Drive to connect Street No. 16 with the westbound transit stop at Langford Crescent.
78. Please provide a 20-metre ROW with sidewalks on both sides of the road for Street No. 7 (main north-south portion) and Street No. 11 based on their connectivity with Campeau Drive. Similarly, provide a 20-metre ROW with a sidewalk on both sides of Street No. 9 to connect with the proposed pathway to Rosenfeld Crescent and the sidewalk on Street No. 10.
79. Figure 13 should show existing transit stops on Weslock Way. Please revise.

Element 4.1.3 New Street Networks

80. In Table 18, Street No. 11 should read "(North of Campeau Drive)".
81. In addition to traffic calming measures proposed in Figure 14, provide bulb-outs which narrow the road to 7.0m at all local road intersections (2-way with 1 lane in each direction, or 1-way with 2 lanes in one direction) as a form of pro-active speed management. The bulb-outs would ideally be arranged to enclose on-street parking. This practice is a step towards designing and building all new or reconstructed local residential streets with a target operating speed of 30km/h per the new Strategic Road Safety Action Plan Update. A 30 km/h Design Guideline with further guidance on how to achieve a 30km/h target for new roadways will be developed in 2020.
82. Provide additional traffic calming measures/attention to Street No. 1 to prevent this road from being used as a cut-through alternative to Kanata Avenue. Reference the Ottawa Traffic Calming Design Guidelines.
83. *Module 4.3 Boundary Street Design* The TIA report states that transit LOS between Terry Fox Drive and Herlihey Way is F, but Appendix D shows TLOS E. Explain or correct this discrepancy.

Element 4.7.1 Route Capacity

84. Please contact OC Transpo to determine the existing passenger load on bus routes adjacent to the development (primarily the 62, 265, and 268) and determine if existing service is enough to accommodate the new transit trips generated by the development.

Element 4.9.2 Intersection Design

85. Appendix D does not include the completed analysis for intersection transit LOS. Please provide.

86. The reported vehicle LOS in Table 24 does not align with v/c ranges per Section 6.1 of the City's MMLOS Guidelines (2015). Please address.

Traffic Signal Operations

Element 3.3.2

87. Assign more trips to the Campeau Drive and March Road intersection. It is highly unlikely that eastbound vehicles will travel slightly west, then south to access HWY 417. Our experience has been that people take the direct/shortest route, even if it takes more driving time.

Traffic Signal Design

88. No comments to this TIA for this circulation. Traffic Signal Design and Specification reserves the right to make future comments based on subsequent submissions.

Future considerations:

89. If there are any future proposed changes in the proposed roadways geometry for the purpose of construction of a new TCS(s) the City of Ottawa Traffic Signal Design and Specification Unit is required to complete a review for traffic signal plant design and provide the actual design layout.
90. If the proposed traffic signals are warranted/approved for installation, and the RMA is approved, please forward the approved geometry detail design drawings (dwg digital format in NAD 83 coordinates) including base mapping, existing and new underground utilities/sewers, new/existing catch basins locations, Turn-Radius Modeling for approved vehicles and approved pavement markings drawings in separate files for detail traffic plant design lay out.
91. Please send all digital (CADD) design files to Peter.Grajcar@ottawa.ca 613 580 2424 ext. 23035.

Transit Services

92. Table 2 and Module 2 contain out of date transit information. Please update to reflect the October 6, 2019 network service change.

Engineering

Preliminary Grading Plan

93. SWM Pond 4 should be included in the outlined site boundary.

94. As per the cut-fill analysis, approximately ± 250 metres of right-of-way exceeds 3.0 metres fill depth, which exceeds the 2.0 metres and 2.5 metres grade raise restrictions. Given that light weight fill materials are not generally accepted within the City's right-of-way, please discuss within the Servicing Report what mitigation measures are proposed to accommodate the grade raise exceedance. Grading revisions should be made to reduce grade raise requirements as much as possible.
95. Provide basic cross sections through all lot locations in which the grade differential from front yard to rear yard exceeds 2.0 metres. Show all retaining walls and terracing, where proposed. The elevation difference between the Finished Floor of the proposed building vs. the Finished Floor of the adjacent existing building (rear neighbour) should be demonstrated. There are significant concerns that new buildings may be towering over existing buildings.
96. Additional grading information and cross sections are required at all pond blocks to demonstrate how the proposed pond grading ties in with existing elevations. If retaining walls are proposed within pond blocks, they need to be shown.

Functional Servicing Report

97. The proposed realignment of the Kanata Lakes Trunk Sewer must be further discussed within the report. As stated at the pre-consultation meeting, there are no guarantees that the City will agree to relocate any City owned infrastructure. This proposed realignment must be further discussed with the Asset Management Branch and correspondence of City approval (if granted) shall be included in the Report appendices. Draft Plan Approval will not be granted until this issue is resolved.
98. Please review the criteria in Table 3. The listed residential – basic day demand values are incorrect and the residential – maximum daily demands and peak hour demands should be listed.
99. It is stated that the March P.S. has a capacity of 412 L/s and receives a wet weather flow of 325 L/s, resulting in a residual capacity of 87 L/s. Although consistent with information provided by the City, the above numbers have not accounted for the Kanata North development which includes four active subdivision development applications. This should be clarified and revised within the Report.
100. Asset Management has confirmed that the North Kanata Trunk Sewer – Phase 2 is anticipated to be in operation by the end of 2020. Given the timeline of this development application, it is very likely all sanitary flows will bypass the March Road P.S and flow by gravity to the North Kanata Trunk Sewer. This must be clarified within the Report.
101. The Report identifies that SWM Pond 3 is not required for quantity control; therefore it should be removed from the modelling and draft plan of subdivision. Further analysis is required to ascertain if less ponds are feasible. This needs to be resolved prior to draft plan approval.

102. Please provide additional quality control information and preliminary sizing / location of the oil and grit separators that will be proposed for each SWM pond.
103. The inclusion of Low Impact Development strategies throughout the development must be discussed within the Report.
104. Appendix B – the assumed residential unit counts noted in GeoAdvice’s Report do not match the unit counts on the concept plan provide in Appendix A. Further, the water demands at each connection point should be based on the concept plan, rather than assuming an equal distribution of unit type throughout the entire development. Please ensure these unit counts and water demand calculations are updated at the detailed design stage.
105. Appendix B – Please include the original boundary request email from DSEL which shows the preliminary water demand calculations.
106. Appendix C – the unit mix percentages used in the wastewater calculation sheets do not match the concept plan. Further, the wastewater demands at each connection point should be based on the concept plan, rather than assuming an equal distribution of unit type throughout the entire development. Please ensure these unit counts and wastewater demand calculations are updated at the detailed design stage.
107. Appendix C – the total site area is listed as 68.65 hectares whereas the site area in the Report is listed as 70.90 hectares. Please justify.
108. Appendix C – please ensure the areas and population counts listed in the sanitary sewer design sheets match what is shown on the sanitary drainage area plan.
109. Appendix C – a legend is required on the sanitary sewer design sheets to demonstrate what the green and blue highlighted cells represent.
110. Appendix C –It is understood that the existing sanitary forcemain at the intersection of Kanata Avenue and Campeau Drive outlets east to the Kanata Lakes Trunk as opposed to south to the Main Street Trunk. This flow should be accounted for in the sanitary sewer design sheet.
111. Appendix E – the sanitary servicing and drainage plan should be extended to show all areas and pipe reaches shown on the existing sanitary sewer design sheet.

Proposed Redevelopment of Kanata Golf and Country Club: SWM Pond Sizing

112. Please provide a complete HGL analysis for all trunk sewers, at minimum, located through the existing and proposed Kanata Lakes development to demonstrate:

- a. the minor system level of service in the existing neighbourhoods is not impacted by the proposed development (please refer to comments 134, 135, 145 and 183); and
- b. that the HGL will remain at least 0.3 metres below the proposed USFs.

In addition, a storm sewer design sheet must be included to confirm existing and proposed pipe sizing and capacity. Please ensure the pipe sizes presented in the storm sewer design sheet and the stormwater modelling are consistent.

Geotechnical Investigation

113. The geotechnical report should speak to the proposed SWM ponds and comment on the depth of excavation required, bedrock that may be encountered, groundwater elevations, requirement for pond liners, etc.
114. The two areas of tree planting setbacks, as described in Section 6.8, cannot be found on drawing PG4135-3 and PG4135-4. Please illustrate.
115. Drawing PG4135-1 was missing from the hard copy of the Report, instead two copies of PG4135-2 were provided. Please provide Drawing PG4135-1.

Stormwater Management Unit (SMU)

116. The City would like to avoid submerged pipes and the potential of inlet channels being used as extended TSS treatment. Please update the design accordingly. Submerged inlets will be subject to conditions and securities in the agreement.
117. Provide the following elevations for each stormwater management facilities:
 - a. NWL
 - b. Enhanced detention (25mm)
 - c. 2 year
 - d. 5 year
 - e. 10 year
 - f. 25 year
 - g. 50 year
 - h. 100 year
118. City Operations staff will require access around all ponds. All proposed accesses should be over the 100-year ponding elevation. Please show all access locations on a plan for review.
119. Provide the facilities' major overland flow spill point locations and elevations.
120. The following pond details will be required at the detailed design stage:

- a. Drawdown structures
- b. Stop logs for both inlets and outlets (where required) and flow splitters
- c. Structural details for all pond infrastructure
- d. Review and sign off from the Geotechnical Engineer

Are the proposed wet ponds acting as water features for the existing and proposed community or could some wet ponds be converted to dry ponds? Please clarify.

121. Small ponds are prone to algae. It is preferred to combine the small ponds into bigger and deeper ponds. Please address.

Infrastructure Planning Unit

Storm Servicing & Drainage Plan

122. Please revise the drawing to delineate existing pipes to remain, existing pipes to be removed and proposed pipes. Please use different colours to illustrate this delineation.
123. Note that existing storm sewers are not shown for Robson Court, Evanshen Place, Morenz Terrace and Sawchuck Terrace. Please revise to ensure that all existing storm sewers are illustrated.
124. Please add major overland flow arrows for both the existing and proposed system

Request for Additional Drawings / Figures

125. Please provide a pre-development / existing conditions Storm Servicing & Drainage Plan. Please ensure it includes all existing storm pipes and more details with respect to the storm sewer system and drainage areas within the Golf Course (especially as they relate to existing SWM facilities within the golf course servicing the existing neighbourhood). Please provide details of each of the SWM facilities (within the Golf Course) at the downstream end of all existing storm sewers servicing the existing KNL lands.
126. Please provide a proposed drainage plan specifically delineating the proposed catchment areas that drain to each proposed pond (including pond 3, see comment above).

General Modeling Comments (Functional Servicing Report, Kanata Golf & Country Club 2019 Monitoring and Hydrologic Model Calibration Report, Proposed Redevelopment of Kanata Golf and Country Club: SWM Pond Sizing)

127. Existing Conditions Dual Drainage Model
 - a. Please coordinate with the City's Asset Management Branch to obtain an existing, high level, dual drainage model (PCSWMM), to simulate the existing neighbourhoods whose drainage is connected to the subject development. The

City proposes that the proponent use their engineering judgement to modify the City's dual drainage PCSWMM model (reporting attributes assigned, and assumptions made) and use it in the calibration utilizing the monitored data collected by JFSA in 2019. Please establish and clearly report the existing level of service (minor and major) of the existing neighbourhoods by modelling the existing SWM facilities (in the golf course) and private storm sewer networks within the golf course. The proponent shall also take into account irrigation of the golf course when developing the existing conditions model and report on the assumptions made to simulate irrigation.

NOTE: there appears to be a storm sewer network flowing east along Beaverbrook Road beginning at existing MHST11787 (a shared manhole). Given that the existing KNL neighbourhood does not have ICDs, please demonstrate existing level of service (major and minor) along Beaverbrook Road and flows directed to Watts Creek (downstream outlet for the Beaverbrook STM sewer).

128. Proposed Conditions Dual Drainage Model

- a. The existing conditions, dual drainage model (noted above) should then be modified to simulate the proposed development dual drainage system. The City requests that the proponent demonstrate the impact of the proposed development on the existing neighbourhoods by reporting on the minor and major system level of service for the existing development based on the results of the proposed development dual drainage model. The proposed dual drainage SWM should also note any impacts to adjacent systems if there is an increase in overland flow directed to these "external" systems.
- b. Please address the dual drainage model when sizing the ponds given that the model will consider HGL and pond stage storage (and pond inverts). This hydrologic / hydraulic model will provide the City better understanding of the system for Draft Plan review and approvals.

NOTE: there appears to be a storm sewer network flowing east along Beaverbrook Road beginning at existing MHST11787 (a shared manhole). Please clearly report on any changes to the existing level of service (major and minor) to ensure there is no increase in potential for basement surcharge for existing homes on Beaverbrook Road or increased flows to Watts Creek (downstream outlet for the Beaverbrook STM sewer). Alternately, confirm if there is a possibility that flows from Beaverbrook will flow into the Weslock Way STM sewer?

129. Boundary Conditions / Beaver Pond – Kizell Drain Watershed Model

- a. The proponent shall provide a detailed section on the boundary conditions used for the dual drainage models specified above.

- b. With respect to the Beaver Pond / Kizell Drain model, the proponent can decide whether to:
 - i. Continue to use the SWMHYMO / XPSWMM model (see comments E2 below) replacing the existing commands (that simulate the drainage areas for the subject development/existing development discussed above) with output files (hydrographs / timeseries), extracted from the dual drainage models; OR
 - ii. Use the PCSWMM software, and the dual drainage models referenced above, and import details from the existing SWMHYMO / XPSWMM model to serve as the new model for the Kizell / Beaver Pond and downstream Kizell drain.

Please provide an introduction, background / history for the existing conditions model (refer to comment 142). Please add to and revise the proposed scenarios with respect to the Beaver Pond / Kizell Drain Model (please ensure the scenario names are used consistently across all reports and design documentation). Furthermore, please provide a table that clearly declares the changes made to each reported scenario (both at a high level, as described below and with respect to the changes made to the model/s used), so it is clear for the City during their review:

- a. **Existing Conditions:**
Add existing single event AECOM calibrated model.
- b. **Existing Conditions Calibrated 2019 (Ex-Calib):**
The existing conditions model (model a) described above. Include any updates to the Beaver pond storage/outflow and include the PCSWMM information for the existing golf course, calibrated using the data monitored and collected by JFSA in 2019.
- c. **The Kanata Golf and Country Club Development with SWM controls- (Ex-Calib +KGCC+SWM+KNL9).** Please include the PCSWMM information for the proposed development and KNL 9 approved design.
- d. **KNL Development - (Ex-Calib+KNL9):**
Remove KNL 7 and 8 and include only KNL 9 approved design.
- e. **The Kanata Golf and Country Club Development with SWM controls + KNL Development - (Ex-Calib + KGCC+SWM+KNL):**
Include KNL 7 and 8 diverted to Beaver pond. Note that the proponent shall NOT assume that KNL 7 and 8 have no quantity control.

Functional Servicing Report

130. As per the Pre-Consultation minutes (dated March 19, 2019): “Developer must file petition for section 4 to extend Kizell drain up to the Beaver pond to gain a legal outlet or to obtain easements over the same length of Kizell Creek.” The property is tributary to the downstream Kizell municipal drain, with a natural channel extending from the Kizell Municipal Drain to the Beaver pond. Please provide confirmation that a legal stormwater outlet has been obtained prior to draft approval.
131. Following up on Pre-Consultation minutes (dated March 19, 2019): please provide an assessment of the existing Beaver Pond with respect to quality control and how 80% TSS removal will be maintained in the Beaver Pond considering the additional flow volumes from the proposed development of the subject site that could affect the quality treatment that the pond currently provides.
132. Please provide more information on the sizing of the proposed SWM ponds based on the existing outlet elevations and maximum HGL’s. Specifically, the area required including a consideration for sediment storage area.
133. Do not assume the scenario which involves sending uncontrolled flow from future phases 7 and 8 of the KNL developments to the Beaver pond as the new baseline (the preferred SWM servicing strategy for phases 7 and 8 has not been approved by the City and other stakeholders). The baseline scenario to be considered for the Beaver pond is the existing conditions plus KNL Phase 9 scenario (**Ex-Calib+KNL9** scenario per comment 136C above)..
134. Please revise the report to provide the following results for all modelled scenarios (as specified by the City in the general comment 136C above):
- a. peak inflow into the beaver pond;
 - b. water volume directed to beaver pond;
 - c. beaver pond water surface elevation (WSEL) in conjunction with peak outflows (include the critical storm duration or event if continuous modelling); and
 - d. Kizell drain flow comparisons.
135. Please provide a discussion which compares the model results for all modelled scenarios (requested above in comment 141). When making comparisons for the proposed development please reference the pre-development (“Ex-Calib+KNL9” model) vs post-development (“Ex-Calib +KGCC+SWM+KNL9”) scenarios.
136. The pond outflow from the scenario that includes existing conditions, Kanata Lakes golf course with SWM controls and KNL developments (all phases) exceeds the allowable peak flow rate of 0.96 cms for the 100-year event as specified in the C of A issued in 2008. Therefore, complete an assessment of the downstream Kizell Creek to include (but not limited to) the capacity of culverts and water levels on the creek.

137. The 100-year pond outflow rate of 1.207 cms for the “Excalib+KNL” scenario is well below the pond outflow rate of 2.43 cms provided by IBI to support the development of Phase’s 7, 8 and 9 (IBI, 2016). This requires further discussion with the City.
138. Please clearly provide a summary of the level of service of both the major and minor system for the existing neighbourhoods under existing conditions compared to future/proposed conditions. The proponent shall demonstrate that the major and minor system level of service in the existing neighbourhoods is not impacted by the proposed design (for all storm events up to and including the 100 year event and stress test).
139. Please provide a water balance for this proposed development.
140. Please revise this report to describe the proposed strategies used to manage erosion at existing critical areas and the locations where an increase in erosion potential has been identified? Please refer to comments 178-180 below.
141. The Beaver Pond maximum allowable release rate is the one listed in the MECP ECA: 0.96 CMS. Any changes beyond this requires an amendment to the ECA. The Beaver Pond ECA will be required to be amended by the proponent. The application will more than likely be a direct submission and not fall under the Transfer of Review program. Please ensure that this report (and the SWM Pond Sizing Report/Memo) is revised to address this.

Kanata Golf & Country Club 2019 Monitoring and Hydrologic Model Calibration Report

142. The model used by JFSA was the MVCA (Flood Plain Model 2017). The City has requested that JFSA use the AECOM model. Include stage-storage area for the Beaver Pond based on the field survey undertaken by AOV and the PCSWMM model for existing golf course.
143. Please revise the report to describe the reasoning for the calibration process
144. Compare the pond inflows (and volumes) for all scenarios during the 2 year to 100-year events.
145. The report focused more on the calibration of the model as opposed to the flow monitoring. One must therefore assume that the flow monitoring program was successful. Section 1 should speak to the quality of the data, including but not limited to the following:
 - a. Were there gaps in the data? Were corrections needed?
 - b. Did the scattergraphs make sense?
 - c. How were the instruments calibrated?
 - d. Was there a standard rain gauge adjacent to the tipping bucket rain gauge?
 - e. How were the instruments installed (facing upstream or downstream?) Were there any local hydraulic issues?

- f. An appendix showing the flow monitoring data would be helpful.

Figure 3 is confusing. The Y axis seems off (low). It is not clear how the rainfall depths illustrated in Figure 3 match those in Table 3. Please clarify or revise.

- 146. Was there weekly maintenance and if so, were there sediment issues that could have impacted the data. Was the depth and velocity checked manually with each visit (assuming there was flow)? Please confirm.
- 147. Section 3 states that the orifice at the Beaver Pond outlet was never submerged, making it difficult to measure the outflow. However, Appendix B presents simulated vs measured outflows at the beaver pond outlet. Were there any velocity measurements at the orifice outlets? Were there any flow measurements directly down stream of the outlet that could be compared with the theoretical flow calculation? Please elaborate more on how flow was measured at the outlet and how accurate are the theoretical flows through the orifice?
- 148. More explanation on how the new calibrated parameters allowed for the removal of the underground storage in the AECOM model should be provided. This is important and needs to be explained in greater detail. How did the new parameters account for the flow attenuation that the underground reservoirs provided? Note that in JFSA's 2015 Continuous Modelling of Beaver and Kizell Ponds Under Existing Conditions Report states that in Section 3.2 "the peak outflows and water depths simulated without the sub-surface storage are frequently more than twice the monitored values and would not represent good calibration". Also, discuss how the 2019 existing conditions assessment (i.e. parameter estimation, approach, calibration at the pond, etc.) differs than the approach taken by JFSA on behalf of KNL to transform AECOM's single event model to a continuous model (JFSA, 2015). The 2015 updated continuous model included the two underground storages.
- 149. How do we know that the golf course land did not provide most of the underground storage? The way the model is now calibrated it appears that by adjusting parameters in the model that was formally underground reservoir is now assumed relatively evenly distributed over the entire area contributing to the Beaver Pond. What if in fact most of the storage was attributed to the golf course? This would mean that the current assumption that storage is provided by areas other than the golf course is not right. Please clarify and revise accordingly.
- 150. On page 11, Section IV and V we believe this means Table 9 and not 8. Please revise.
- 151. Please provide a copy of the 2018 Surface Water and Rainfall Monitoring Program Memo dated February 6, 2019, as referenced in Section 1.1.
- 152. Section 2.2 references 2018 rainfall data. Is this a typo? Should this reference the 2019 data? Please revise accordingly.

153. City of Ottawa Sewer Design Guidelines recommends 3 storms for calibration and 3 for validation. Was any of the monitored data collected in 2019 used for validation of the calibrated model? If not, consider validation with 2019 data (i.e. half the monitored data used for calibration and the other half used for validation), or validate with monitored data to be collected in 2020. Please clarify.
154. Table 4 declares that the 2019 rainfall Duration / Max Intensity is equivalent to less than a 2-year return period (per the IDF curves from the Ottawa International Airport, based on data from 1967-2003). Please comment on whether the calibrated model will simulate conditions that may exist during critical events, such as the 100-year storm? If applicable, please ensure that future models address this comment.
155. Provide SWMHYMO models in an appendix (and the digital version of all models used as part of the calibration exercise).
156. Provide a description of the modeling parameters and typical ranges listed in Table 8.
157. Please provide a drawing that illustrates the drainage areas tributary to the Kizell Cell, Beaver Cell and the Kizell drain to the confluence of Watts Creek. Please ensure that the catchment areas identified have the same ID as used and referenced in the SWMHYMO model.
158. Provide a SWMHYMO schematic for the different scenarios.
159. Provide a figure of the catchments modified in the SWMHYMO model.
160. Provide a table comparing the parameters assigned to catchments in the original and updated existing conditions SWMHYMO model.
161. Any observations made on site during the monitoring process shall be reported (i.e. please report any observations with respect to the state of the beaver pond outlet).

Proposed Redevelopment of Kanata Golf and Country Club: SWM Pond Sizing

162. Table 1: “Outflow from Beaver Pond to Kizell Drain, Flow Location 9” shall be revised to include the water surface elevations that correspond to the peak outflows from the beaver pond.
163. Are the proposed golf course storage requirements based on downstream capacity of the sewers or outflow/storage of the Beaver Pond? Please confirm.
164. The 100-year flow into the pond for the KNL scenario is 50 CMS compared with another scenario that includes the KNL scenario and the inflow is 39 CMS. Why is there a difference when each scenario includes the identical KNL scenario? Please explain.
165. Table 1 modelling results shall reference the corresponding rainfall data used. Please revise.

166. Please provide more details on how the SWM ponds proposed for Kanata Golf and Country Club were conceptually sized. Please include details such as whether outlet rating curves are used or whether dual drainage and routing are considered. Please ensure references are consistent with the sub-catchment drawings /drainage area IDs and the model schematics requested above.
167. It is stated that *“a required storage volume has not been provided for Pond 3 (which will control 9.38 ha of parklands), as the required storage volume and release rates for this pond were substantially smaller than the 4 others proposed SWM Ponds”*. Further justification is required to support the number of ponds proposed and how all golf course lands will be attenuated and controlled.
168. With respect to Table 4, please report on the total number of instances when peak flows exceed 0.5 m³/s and the range of how long this critical area is exposed to flows exceeding 0.5 m³/s.
169. Please revise the report to ensure that the erosion analysis results are reported for all scenarios listed in comment 136C.
170. As per the Pre-Consultation minutes (dated March 19, 2019): the continuous SWM model should be considered for the entire length of Kizell/Watts creek. It appears that the continuous run evaluated only one location (0.5 cms) on the creek. Previous studies indicate that there is more than one location where erosion may be an issue. Please refer to comments made with respect to the Kizell Drain Erosion Assessment and ensure this memo is revised to report details for all critical areas.
171. With respect to the erosion impacts evaluated for Kanata Golf and Country Club, it is not clear why any flow in excess of 0.5 m³/s at the critical location identified in the Kizell Drain Erosion Assessment (Matrix Solutions, August 2019), is considered acceptable as an erosion problem already exists. Please explain.

As noted in the *“Shirley’s Brook & Watt’s Creek Phase 2 Stormwater Management Study”* (AECOM, 2015), hereafter referred to as the AECOM report, the existing rates and locations of erosion sedimentation and remobilization of existing silt deposits is already an issue. With respect to page 4, 1st paragraph, note that any proposed increase in flow volumes or peak flows shall include an appropriate mitigation strategy. Furthermore, the KNL development is not the baseline therefore comments in 2nd paragraph are not applicable. To say the increase is “minimal” and “negligible” means little when there is an existing problem. The report states that the increase is “manageable.” Please revise this memo to describe the proposed strategies used to manage erosion at existing critical areas and the locations where an increase in erosion potential has been identified.

172. Clarify why the flows downstream of Station Road are approximately two times higher than existing conditions during the 100-year event. Is the significant increase due to

growth within Beaver Pond (approximately 0.2 cms), the direct storm connection to Kizell Creek from a portion of Phase 9 and eliminating the bottleneck at Nordion by upsizing a culvert?

173. For all LID practices, please identify the location and ensure the depth of the feature (and required infiltration testing) is performed to support this proposal. Furthermore, the proponent will be required to coordinate such design with the City of Ottawa throughout the design stages prior to submitting detailed design to the development review team.
174. Given that the Functional Service Report refers to the findings and proposed design detailed in this SWM Pond Sizing memo, please revise the memo to provide a summary of the following results for all modelled scenarios (as specified by the City in the general comment 136C above):
- a. Peak inflow into the beaver pond;
 - b. Water volumes directed to beaver pond;
 - c. Beaver pond water surface elevation (WSEL) in conjunction with peak outflows (include the critical storm duration or event if continuous modelling); and
 - d. Kizell drain flow comparisons.
175. Given that the Functional Service Report refers to the findings and proposed design detailed in this SWM Pond Sizing memo, please clearly provide a summary of the major and minor system level of service for the existing neighbourhoods under existing conditions compared to future/proposed conditions. The proponent shall demonstrate that the major and minor system level of service in the existing neighbourhoods is not impacted by the proposed design (for all storm events up to and including the 100-year event and stress test).
176. Please provide the continuous SWM modeling files for all scenarios modelled.

If an increase in the outflow from the Beaver Pond is proposed the MVCA HEC-RAS model employed in the flood plain mapping study will need to be revised to assess if there are any detrimental impacts on the delineated flood line with the implementation of the proposed concept.

Kizell Drain Erosion Assessment

177. Note that Section 5 states a concern with two culverts lacking smooth transition of flow. If these culverts are retrofit to address this concern, would there be increased flow downstream creating more erosion potential (especially at KDG-5)? Please explain.
178. The study ends at the confluence with Watts Creek. The expectation was that the investigation would include Watts Creek. The pre-consultation minutes state “there are concerns regarding erosion, sediment, and thermal impacts. There would be a requirement for continuous modelling from the beaver pond and downstream watercourse to the Ottawa river.” Please ensure this is addressed within the next submission.

179. There is no information on downstream flooding risks, rehabilitation / erosion protection, mitigation for thermal impacts, fish habitat restoration, and wetland alterations. The pre-consultation minutes state “The area downstream of the beaver pond, there will be a need for a geomorphological study to look at sediment and erosion and confirmation of adequate structure sizes downstream.” “The geomorphological study would need to confirm any downstream flooding risks, erosion and deposition analyses, continuous modelling, rehabilitation/erosion protection, mitigation for thermal impacts, fish habitat restoration, and wetland alterations.” Please ensure this is addressed within the next submission.
180. In section 2: Background information: It is recommended that the author refer to “LINKING SEDIMENT ERODIBILITY AND CHANNEL STABILITY TO UTILIZATION OF AVAILABLE HABITATS BY FISH POPULATIONS IN WATTS CREEK” Prepared by : Colin D. Rennie, Ph.D., P.Eng. Prepared for: Binitha Chakraborty Sr. Municipal Engineer, National Capital Commission, and “WATTS CREEK WATERCOURSE AND WATERSHED MANAGEMENT PLAN,” Prepared for: National Capital Commission, Prepared by: Stantec Consulting Ltd. Please revise the report to make reference to these reports/studies and address the problematic areas identified within these studies.
181. As per the Pre-Consultation minutes (dated March 19, 2019): “Assuming development will be connecting to existing storm infrastructure that go to existing facility, there are concerns that the NCC (who are one of the downstream landowners), and a senior level of government, will not permit increased peak flows and volume increased and have already expressed concerns with erosion, sediment and thermal impacts in relation to other developments proceeding in the area.” Please identify NCC concerns raised per the meeting notes and clarify how this has been addressed.
182. The report by Colin D. Rennie shows critical shear stress for particle entrainment for cohesive bed sediments on Watts Creek watershed measured to range from 0.9 N/m² to 5.1 N/m². The value used in Matrix was 20 N/m², which represents a significant difference. The values in the Rennie report are based on actual measurements made in a laboratory therefore please use the values found in this study.
183. In Section 4, please provide rational why KDG-6.2 is “the most sensitive reach of the Kizell Drain.” The Shirley’s Brook and Kizell Drain / Watts Creek Fluvial Geomorphology Existing Conditions Report (JTB Environmental Systems Inc., 2015) hereafter referred to as JTBES report, identified downstream areas KDR-2 and KDR-3 having the greatest instability.
184. The JTBES report which was part of the AECOM report included Rapid Reach Assessment Forms. Would this analysis be beneficial in this case? Please explain.
185. The results in Table 1 vary significantly from Table 9 of the JTBES report. The Matrix report shows 3 areas “In Regime” (RGA) and JTBES does not show any of these areas

“In Regime.” Also, the RGA and RSAT in the two reports do not compare well. Please address.

186. In section 4.1 it states that bank full discharge was calculated using a bank full slope of the channel. Please include the slope for every flow calculation. There are many elevations shown on the detailed survey. It would be better to use the slope of the channel bottom as opposed to the bank full slope.
187. JTBES report states “The results of this assessment tool (RGA) do not always coincide with field evidence, indicating the assessment tool is not detailed enough to properly interpret actual field conditions.” Would you agree with this statement and if yes how would it apply to this report?
188. JTBES report states the greatest instability is in the Kizell drain KDR-2 and KDR-3 (approximately Herzberg to Legget). The Matrix report states that the most sensitive areas are further upstream at KDG-6.2 (by Station Road). Is there a difference between instability and sensitive areas? Please clarify.
189. Section 4.4: (comparison with AECOM report) It is not clear what the intentions were to back calculate the critical discharge. If this is relevant, please provide the dimensions used to do the calculation and state why this is relevant. It would appear that the discharge being so low indicates a problem which would correspond to what was reported in the JTBES report for this area of the stream but not in the Matrix report.
190. Section 4.4: please provide clear rationale with respect to the statement “the analysis carried out in this report has paid special attention to the complexity of streambed structure and framework and therefore resulted in critical discharge values that are more reasonable and representative of river mechanics along the study area.” It is not evident on how this report is more detailed than the JTBES report.
191. The conclusion in the JTBES report was “Kizell Drain/Watts creek systems are currently responding to changing inflow and sediment regimes that have arisen from prior changes to land use activity.” “It can be concluded that additional development in these watersheds has the potential to exacerbate existing rates and locations of erosion sedimentation and remobilization of existing silt deposits. It will be the responsibility of the development proponent to mitigate the anticipated impacts through an appropriate stormwater management strategy.” There has been no strategy proposed; therefore, please provide a strategy to mitigate the impacts of an increase in runoff volume.

Corporate Real Estate Office

Phase One ESA

192. The report is not in compliance with the O. Reg. 153/04, as required by the City Official Plan. Specifically, the report does not include all the requirements of the regulation re “Environmental Source Information”. For example, the MECP search for the certificates

of approvals, etc. shall be done for the phase one property and the adjacent properties, however, the search is done for the phase one property only. Or, the "Retail Fuel Storage Tank Information" shall be done for the phase one study area, however, this search is done for the phase one property and a few of the adjacent properties only. Also, an ERIS report is not obtained or utilized. Similar comments apply to other environmental source information. While the ERIS report covers the phase one study area, it also provides some additional information that can be reviewed by the qualified person. Thus, the phase I ESA's conclusions and recommendations are not based on a comprehensive set of background information as required by O. Reg. 153/04. Thus, the Phase One ESA report shall be revised with the inclusion of the required Environmental Source Information.

Phase Two ESA

193. The report shall provide rationale with regards to the number of samples, sampling locations and the depth of samples for identifying mercury and other contaminants throughout the golf course lands. Varying sample depths should be obtained within the greens and fairways of the golf course (as most of the sampling was completed around the exterior edges of the golf course). Shallower sample depths may result in identifying higher mercury concentrations in the soil.
194. As per the recommendations of the report, further delineation of mercury impacted soil is required within Parcel 3 on the northeastern area of the property. A revised Phase Two ESA including the delineation activities / results shall be submitted for the City's review.
195. Further to the delineation of mercury impacts, soil remediation and /or risk assessment / risk management (RA/RM) activities will be required prior to any construction activities. Associated site remediation and/or RA/RM reports shall be submitted for the City's review prior to any commencement of work.

Fire Services

196. All dead-end streets must have a sufficiently large turnaround for fire vehicles if they are in excess of 90 metres long from intersection.

EXTERNAL AGENCIES

Mississippi Valley Conservation Authority

The staff of Mississippi Valley Conservation Authority (MVCA) has reviewed the plan of subdivision and zoning by-law amendment applications for concerns related to natural heritage, natural hazards and water quality and quantity for the subject property and surrounding lands. The scope of the natural heritage review includes wetlands, watercourses and significant valleylands, while the focus of the natural hazards review includes flood plain, unstable slopes and unstable soils.

Natural Heritage

197. The subject lands were developed as a golf course in the 1970's and have been maintained as such since. Aerial imagery indicates that there are two large ponds on the property, but our mapping sources do not identify any natural watercourses or wetlands associated with these lands. The Environmental Impact Statement prepared by McKinley Environmental and dated August 2019 concludes that there are no watercourses or wetlands present on the subject lands. MVCA offers no substantial comments on natural heritage as the subject lands do not appear to contain any features within the scope of our review.

Natural Hazards

198. The attached mapping indicates that MVCA does not regulate any natural hazards on the subject lands. However, the runoff from the subject lands will be directed to the Beaver Pond, which outlets to the Kizell Drain. MVCA regulates flooding and erosion hazards along this watercourse and will be reviewing the proposed stormwater management to ensure that the proposed development would not adversely affect these hazards. The regulatory floodplain modelling for the Kizell Drain was updated by MVCA in 2017. The model reviewed the catchment area for the watercourse, considered existing and future development conditions of the affected lands. With respect to the future development conditions, MVCA reviewed the municipal land use planning documents for guidance on the long-term development potential of currently vacant lands. It is important to highlight that the subject lands were modelled as open space in the floodplain model and the current proposal would require these lands to be classified as residential which may adversely affect the downstream flooding hazard.

Stormwater Management

199. Please provide the SWMHYMO model data in digital form so that MVCA can review the model and results in greater detail. These models and results will be compared to the future conditions SWMHYMO model from the MVCA 2017 Watts Creek/Kizell Drain Flood Plain Mapping Study as the results from this model scenario was used in the delineation of the regulatory (1:100 year) flood line of Kizell Drain.

200. Although the calibration exercise achieved reasonable results when compared to measured flows, the flow events that were captured during the monitoring period were, as documented in the report, all smaller than a 1:2 year event. Since the calibration events were all fairly small, the model results and performance may not translate to higher flow/flood events. Please clarify.
201. Coordination is required with the proponents of Kanata Lakes Stages 7, 8 and 9 as it is our understanding their servicing studies may propose to modify the outlet from the Beaver Pond. This potential modification, combined with the proposed development of the Kanata Golf and Country Club, has the potential to adversely affect downstream flooding and erosion hazards. MVCA recommends a coordinated approach between the developers be established so that comprehensive modelling accounting for all potential development lands tributary to the Beaver Pond be developed and compared against the analysis used to develop our regulatory mapping.
202. Any proposed increase in outflow from the Beaver Pond will have to be assessed by MVCA to determine if there are any detrimental impacts on the regulatory mapping delineated for Kizell Drain.

National Capital Commission

The land is located within the Kizell Creek subwatershed that drains into the Kizell Municipal Drain, which passes onto federal land (the Capital Greenbelt) at Herzeberg Road. Kizell Drain is tributary to Watt's Creek. For convenience, the subwatershed will be referred to as the Kizell-Watt's subwatershed.

Potential Impacts on Federal Lands

203. The proposed project converts an open space land-use, which currently includes several retention ponds and mixed open-channel and piped conveyance into a residential subdivision. This change will increase peak flows (flood risk), runoff volume (erosion risk) and sediment loading and temperature (environmental risk).
204. The supporting documents include some proposed mitigation measures for flood, erosion and environmental (sediment) risk.
205. The Watt's Creek system provides cool-water habitat and the Kizell-Watt's corridor within the Greenbelt provides important habitat including species-at-risk habitat. However, the watercourses are currently experiencing problematic erosion in response to upstream urban development. Given the existing context, all increases in runoff volume into the Kizell Drain or Watt's Creek within the Greenbelt present an increased erosion risk, regardless of the corresponding flow.
206. No mitigation measures (e.g., low impact development (LID) measures) are proposed to mitigate the projected increases in runoff volume in response to the full range of

rainfall events. This presents an unacceptable increased risk of erosion on federal lands and is not in keeping with industry best practice. Further, the proponent identified that

“Given the range of surface infiltration rates collected in the field...stormwater runoff appears to have the opportunity to infiltrate at the surface under pre-development conditions. For post-development conditions, it **may thereby be possible to implement LID measures that include an infiltration function...**”

in the Kanata golf and Country Club – 2018 Surface infiltration Testing (JFSA, 2019) report.

207. The hydrologic model calibration to quantify the existing benefit provided by the golf course lands was calibrated to 1-year of data, and the largest event in the monitoring period had a return period of less than 2-years. Therefore, despite the good match between the model and observed results, a broader monitoring period, capturing larger events, would be required to ensure the existing benefit (peak flow attenuation) from the existing KGCC has been captured. If the existing benefit is not properly captured, then the proposed conditions will represent an improperly quantified increase in flood risk compared to existing conditions. This would present an unacceptable increase in flood risk to federal lands. A longer monitoring period is required to ensure this potential flood risk is mitigated.

NCC Greenbelt Natural Resource Management

208. The NCC is concerned about the resulting effects relative to Greenbelt natural resource management goals of protecting, maintaining and enhancing the following:

- a. Cool water fishery (special note: it has been confirmed by DFO that the system is to be managed as a cool water system) and associated aquatic communities in the Kizell-Watts aquatic corridor.
- b. Significant natural terrestrial features (land, forest and wildlife/species at risk) and ecological functions of the aquatic corridor.
- c. Quality and quantity of surface water entering the aquatic corridor on NCC federal lands.

Detailed technical comments based on a review of the Kanata Golf & Country Club 2019 Monitoring and Hydrologic Model Calibration Report (Sept 2019, JFSA Inc.)

209. Beaver pond observed and simulated results

- a. 2019 period did not capture any significant rainfall events (all with return period less than 2-years) and per the final page in appendix B Observed and Simulated Beaver Pond Outflows based on 2019 Monitoring Data and Updated Model Calibration the two largest observed values are underestimated by the modelling.

This may be a problematic trend if the calibrated existing conditions model will continue to underestimate how full the Beaver Pond would be (and how high outflows would be) for larger (less frequent) rainfall events.

- b. Based on the 2019 data alone, insufficient information has been presented to confirm that the existing Beaver Pond behavior to large rainfall events is understood.
- c. We do acknowledge that the 'simulated to observed' fit is relatively good ($R^2 = 0.76$) and for very small events the simulated outflow exceeds the 'observed' value. It would be important to see if this trend (where the simulation is sometimes higher-than and sometimes lower-than observed) is present at higher flows or if the simulation is biased toward underestimating high flow results. Insufficient data has been presented to understand this.
- d. Clarify how the 'observed' outflow from Beaver Pond was quantified, was it measured or based on a theoretical rating curve? Given the historic mismatch between theoretical and observed Beaver Pond performance (outflow-water level relationship) outflow from Beaver Pond should be measured directly in sequence with pond water level measurements.

210. Post conditions model comparison with existing calibrated model.

- a. STANDHYD parameters
 - i. Underestimating baseflow volume compared to existing conditions model ($V_{HydCond} = 0.001$ mm/hr, which gives high volume of baseflow vs no baseflow returned). This will underestimate the runoff volume increase to downstream lands and should be corrected.
 - ii. Pre-2019 urban developments should not have the same parameters,
Q: were pre-2019 urban areas calibrated purely based on the **Campeau flow monitoring location data** (which is upstream of the golf course)? Then were the golf course catchments calibrated afterwards (without changing the calibration for pre-2019 urban areas) to improve the fit at the Weslock flow monitoring location?
 - iii. If the calibration was not done in that manner, it may not be justifiable to maintain any calibration parameters that reduce simulated runoff volume or peak flow values beyond a more standard 'design' parameter selection (or the City Guideline value where applicable) in the post-development modelling.
 - iv. The reason for this concern is that if the behavior of the existing golf course (that is benefit, by reducing peak flows and runoff volumes compared to a developed condition) has not been carefully isolated, the presumed runoff

from future urban lands will be underestimated. This would result in greater risk to downstream lands than captured in the technical analyses.

- v. Appendix C – “Campeau Site – June 13th Rainfall Eevent” (PDF page 82) – Simulated flow matches the observed peaks and shapes well, but underestimates baseflow and response to individual events. Suggests that the selection of $F_c = 25$ mm combined with an $X_{imp} = 0.25$ and a rapid initial abstraction recovery time (1.5 hrs for impervious and 6 hrs for pervious) may not be representative for low-flow behaviour. This mismatch would be made worse in the proposed conditions model where NASHYD commands are replaced by STANDHYD commands since STANDHYD lacks a baseflow return component.

This illustrates that frequent flow volume and magnitude may be underestimated by using the calibrated parameters (which only describe existing conditions) for the proposed conditions models. This in turn would underestimate downstream erosion risk, which is a concern for the NCC.

- vi. Erosion threshold exceedance analysis. The ‘representative’ shear stress for the clay be material in Kizell Creek of 20 Pa is higher than values measured further downstream within Watt’s Creek. A critical shear stress of 3.7 Pa was measured for the exposed clay bed material along Watt’s Creek using a lab test (piston flume) [work by Salem et al (2015) and referenced by Brennan et al (2018)]. That local data should be considered in the erosion analysis, which appears to rely mainly on regional data at this time.

Ottawa-Carleton District School Board

211. Staff advises that while the OCDSB has no legal ground on which to object, it does have pupil accommodation concerns with respect to the proposed application (D07-16-19-0026).

212. Further, Staff advises that proposed plan of subdivision for application D07-16-19-00265 contain a draft plan condition stating that:

The Owner be required to inform prospective purchasers that school accommodation pressures exist in the Ottawa-Carleton District School Board schools designated to service this development which are currently being addressed by the utilization of portable classrooms and/or directing students to schools outside their community.

Ottawa Catholic School Board

213. We have to existing elementary schools that serve this area, Georges Vanier and St. Gabriel as well as one high school, All Saints. The Board's attendance boundaries are based on the current configuration of the community, including the golf course lands.
214. Should this area be redeveloped for residential purposed, the Board may need to adjust our current elementary attendance boundaries to balance enrolment in this area.
215. In order to protect the interests of the Board and inform potential purchasers we request that the following Draft Plan Condition be included on our behalf:

"The Owner be required to notify prospective purchasers that Ottawa Catholic Schools in the area are overcrowded and therefore existing attendance boundaries may be changed and/or students may be directed to schools outside their community or accommodated in portables".

Enbridge

216. Enbridge Gas Inc. does not object to the proposed application(s).
217. This response does not constitute a pipe locate or clearance for construction.
218. The applicant shall contact Enbridge Gas Inc.'s Customer Connections department by emailing SalesArea60@Enbridge.com for service and meter installation details and to ensure all gas piping is installed prior to the commencement of site landscaping (including, but not limited to: tree planting, silva cells, and/or soil trenches) and/or asphalt paving.
219. If the gas main needs to be relocated as a result of changes in the alignment or grade of the future road allowances or for temporary gas pipe installations pertaining to phase construction, all costs are the responsibility of the applicant.
220. Easement(s) are required to service this development and any future adjacent developments. The applicant will provide all easement(s) to Enbridge Gas Inc. at no cost. The Inhibiting Order will not be lifted until the application has met all of Enbridge Gas Inc.'s requirements.
221. In the event a pressure reducing regulator station is required, the applicant is to provide a 3 metre by 3 metre exclusive use location that cannot project into the municipal road allowance. The final size and location of the regulator station will be confirmed by Enbridge Gas Inc.'s Customer Connections department. For more details contact SalesArea60@Enbridge.com.

222. The applicant will grade all road allowances to as close to final elevation as possible, provide necessary field survey information and all approved municipal road cross sections, identifying all utility locations prior to the installation of the gas piping.

223. Enbridge Gas Inc. reserves the right to amend or remove development conditions.

Bell Canada

224. The following paragraph is to be included as a condition of approval:

“The Owner shall indicate in the Agreement, in words satisfactory to Bell Canada, that it will grant to Bell Canada any easements that may be required, which may include a blanket easement, for communication/telecommunication infrastructure. In the event of any conflict with existing Bell Canada facilities or easements, the Owner shall be responsible for the relocation of such facilities or easements”.

225. We hereby advise the Developer to contact Bell Canada during detailed design to confirm the provision of communication/telecommunication infrastructure needed to service the development.

226. As you may be aware, Bell Canada is Ontario’s principal telecommunications infrastructure provider, developing and maintaining an essential public service. It is incumbent upon the Municipality and the Developer to ensure that the development is serviced with communication/telecommunication infrastructure. In fact, the 2014 Provincial Policy Statement (PPS) requires the development of coordinated, efficient and cost-effective infrastructure, including telecommunications systems (Section 1.6.1).

227. The Developer is hereby advised that prior to commencing any work, the Developer must confirm that sufficient wire-line communication/telecommunication infrastructure is available. In the event that such infrastructure is unavailable, the Developer shall be required to pay for the connection to and/or extension of the existing communication/telecommunication infrastructure.

228. If the Developer elects not to pay for the above noted connection, then the Developer will be required to demonstrate to the satisfaction of the Municipality that sufficient alternative communication/telecommunication will be provided to enable, at a minimum, the effective delivery of communication/telecommunication services for emergency management services (i.e., 911 Emergency Services).

229. WSP operates Bell Canada’s development tracking system, which includes the intake and processing of municipal circulations. Please note, however, that **all responses to circulations and other requests, such as requests for clearance, come directly from Bell Canada, and not from WSP.** WSP is not responsible for the provision of comments or other responses.

Rogers Communications CDN Inc.

230. Rogers Communications Canada Inc. requests that the following conditions be included in the municipal approval.
- a. That the owner shall transfer such new easements and maintenance agreements as are deemed necessary by Rogers Communications Canada Inc. to service this subdivision, to our satisfaction and that of the appropriate authority and at no cost to us. The owner is also to ensure that these easement documents are registered on title immediately following registration of the final plan, and the affected agencies duly notified.
 - b. That the application be required, in the Subdivision Agreement, to coordinate the preparation of an overall utility distribution plan. This plan would be showing the locations (shared or otherwise) and the installation timing and phasing of all required utilities (on-ground, below ground) through liaison with the appropriate electrical, gas, water, telephone and cablevision authority. This includes on-site drainage facilities. Such location plan being to the satisfaction of all affected authorities.
 - c. That the owner agrees with Rogers Communications Canada Inc. to arrange for and pay the cost of the relocation of any existing services which is made necessary because of this subdivision, to the satisfaction of the authority having jurisdiction.

Canada Post

Service Type and Location

231. Canada Post will provide mail delivery service to the subdivision through centralized Community Mail Boxes (CMBs) for all residential homes. The amount of sites and locations will be decided once the application is approved and the CUP is circulated.
232. If the development includes plans for 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. Marked on Plan as Apartment A,B,C

Municipal Requirements

233. Please update our office if the project description changes so that we may determine the impact (if any).
234. Should this subdivision application be approved, please provide notification of the new civic addresses as soon as possible.

Developer Timeline and Installation

235. 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.

Zayo

236. Zayo has no existing plant in the area indicated in your submission. No markup and no objection.

Hydro Ottawa

237. The Owner is advised that there is medium voltage underground infrastructure along the [North/South/East/West] side of the property.

- a. The Owner shall arrange for an underground electricity cable locate by contacting Ontario One Call at 1-800-400-2255, not less than seven (7) working days prior to excavating. There shall be no mechanical excavation within one and a half meters (1.5 metres) of any Hydro Ottawa underground plant unless the exact position of plant is determined by hand digging methods. Direct supervision by Hydro Ottawa forces, and protection or support of the underground assets shall be at the Owner's expense.
- b. If the change in grade is more than three tenths of a meter (0.3 metres) in the vicinity of proposed or existing electric utility equipment. Hydro Ottawa requests to be consulted to prevent damages to its equipment.
- c. The Owner shall not use steel curb and sidewalk form support pins in the vicinity of Hydro Ottawa underground plant for electrical safety.
- d. The Owner shall ensure that no planting or permanent structures are placed within the clearance areas around padmounted equipment which is defined by Hydro Ottawa's standard UTS0038 "Above Ground Clearances for padmounted Equipment" which can be found at <https://hydroottawa.com/accounts-and-billing/residential/guide/clearances>.
- e. The Owner shall ensure that any landscaping or surface finishing does not encroach into existing or proposed Hydro Ottawa overhead or underground assets or easement. When proposing to plant in proximity of existing power lines, the Owner shall refer to Hydro Ottawa's free publication "Tree Planting Advice". The shrub or tree location and expected growth must be considered. If any Hydro Ottawa related activity requires the trimming, cutting or removal of vegetation, or removal of other landscaping or surface finishing, the activity and the re-instatement shall be at the owner's expense.

238. The Owner shall contact Hydro Ottawa to arrange for disconnecting the service from the distribution system and removal of all Hydro Ottawa assets at least ten business days prior to demolition/removal the serviced structure.
239. Hydro Ottawa advises that all underground work to service a subdivision be coordinated together and that at least 14 weeks are needed from receipt of the Owner's deposit to start the material purchase and scheduling.
240. The Owner shall apply Hydro Ottawa's standards and City approved road cross-section standards for public roads.
241. The Applicant shall ensure the proposed Private Road complies with Hydro Ottawa Engineering Specification GCG0003 "Typical Private Residential Road Cross Section".
242. Hydro Ottawa requires to be pre-consulted before approving any proposed reduction to the City of Ottawa three meter (3m) minimum standard setback prior to designing the electrical servicing, as it may affect the electrical servicing design timeline for installation and cost. This includes any proposed overhang encroachment into the three-meter (3 metre) setback space.
243. Hydro Ottawa requests to be consulted before completing the composite utility plan where any four-party trench is proposed.
244. The Owner is advised that the responsibility for all costs for feasible relocations, protection or encasement of any existing Hydro Ottawa plant resides with the requesting party.
245. The Owner shall convey, at their cost, all required easements as determined by Hydro Ottawa.
246. The Owner shall enter an Installation and Service agreement with Hydro Ottawa.
247. The Owner may be responsible for a Capital Contribution payment(s) towards a distribution system expansion, if the proposed development requires electrical servicing greater than can be provided by the existing distribution system in the vicinity, either in capacity or in extension limit. This amount shall be in accordance with Hydro Ottawa's Contributed Capital Policy and Conditions of Service.
248. The Owner shall comply with Hydro Ottawa's Conditions of Service and thus should be consulted for the servicing terms. The document, including referenced standards, guidelines and drawings, may be found at <http://www.hydroottawa.com/residential/rates-and-conditions/conditions-of-service>. The Owner should consult Hydro Ottawa prior to commencing engineering designs to ensure compliance with these documents.

249. For more information on electrical servicing, the following link outlines Hydro Ottawa's services for Commercial, Overhead and Underground, and Residential projects, together with contact information for Hydro Ottawa representatives <https://hydroottawa.com/accounts-and-billing/contractors-and-developers/guide/distribution-system-design>

Hydro One Networks Inc.

250. We have reviewed the documents concerning the noted Plan and have no comments or concerns at this time. **Our preliminary review considers issues affecting Hydro One's 'High Voltage Facilities and Corridor Lands' only.**

Please provide a resubmission that addresses each of the comments or issues. Five copies of each plan and five copies of each study are required. A cover letter must be included that states how each of the comments are addressed on the resubmission. All addenda or revisions to any studies, or drawings, shall be accompanied by a *.pdf copy (ie. USB).

Please contact me at Laurel.McCreight@ottawa.ca or at 613-580-2424 ext. 16587 if you have any other questions.



Laurel McCreight
Planner II
Development Review West