Palmer | PART OF SLR

*871 Equestrian Court, Unit 1, Oakville ON L6L 6L7*
*Tel: 647-795-8153 | www.pecg.ca*

Date: June 5, 2024

Project #: 1701628

To: Town of Caledon and Regional Municipality of Peel

From: Zach Kuszczak and Jason Cole – Palmer Environmental Consulting Group Inc.

Cc: Frank Filippo – Brookvalley Project Management Inc.; Scott Land - Candevcon

Re: **Mayfield West Phase 2, Stage 3 (MW2-3) Subwatershed Study Terms of Reference – Data Gap Analysis**

## 1. Introduction

Palmer has been actively involved with technical studies on the lands referred to as Mayfield West Phase 2 Stage 3 (MW2-3) since 2017. Palmer was recently retained by Brookvalley Project Management Inc. (the "client") to review the Town of Caledon's Terms of Reference (TOR) for local Subwatershed Studies and undertake a Gap Analysis comparing the Subwatershed Study requirements against the extensive amount of overlapping background studies for the MW2-3 Lands. The background reports that cover the MW2-3 Lands, include:

- Scoped Subwatershed Study (Wood, 2022)
  - Part A: Existing Conditions and Characterization (Final Report)
  - Part B: Detailed Studies and Impact Assessment (Final Report)
  - Part C: Implementation Plan (Final Report)
- Mayfield West, Phase 2 Secondary Plan Comprehensive Environmental Impact Study and Management Plan (CEISMP) (AMEC, 2014)
  - Part A: Existing Conditions and Characterization
  - Mayfield West Phase 2 (West) Part B
  - Part C: Detailed Analysis and Implementation
- Mayfield West Phase 2 – Stage 3 Comprehensive Environmental Impact Study and Management Plan (CEISMP) Part A: Existing Conditions and Characterization Part B: Impact Assessment Part C: Detailed Analysis and Implementation (Palmer 2022)
- Etobicoke Creek Watershed Plan 2024-2034 (TRCA, 2023)
- Toronto and Region Conservation Authority (TRCA). 2022 Etobicoke Creek Floodplain modelling
- Preliminary Functional Servicing Study (FSS), Mayfield West Phase 2 – Stage 3 Lands, Town of Caledon (Candevcon, 2024)
- Functional Servicing Report (FSR), Draft Plan Application for the Mayfield West Phase 2 – Stage 3 Lands, Town of Caledon (Candevcon, 2024)
- Hydrogeological Investigation Report for Draft Plan Application - Mayfield West Phase 2 Stage 3 Lands, Caledon, Ontario (Palmer 2024)

- Environmental Impact Study for Draft Plan Application - Mayfield West Phase 2 Stage 3 (Palmer 2024)

Based on recent discussions with Town of Caledon and Regional of Peel staff, it was proposed for a Gap Analysis to be completed to determine how much of the Subwatershed Study ToR has already been completed, where the true data gaps are, and what studies are better suited to be completed during later design stages. It is clear that a significant number of technical studies for ecology, hydrogeology, hydrology, hydraulics, stormwater management, fluvial geomorphology and geotechnical engineering have been completed for the MW2-3 Lands already, and this memo aims to recognize this work and utilize it to efficiently support Brookvalley's application for an Official Plan Amendment (OPA) for the MW2-3 Lands.

This memo will review background information to provide an analysis of work previously completed and compare to the requirements listed by the ToR. By comparing these findings to the requirements outlined in the TOR for local subwatershed studies, Palmer aims to identify areas that have successfully met the criteria and areas where additional research is needed to fulfill the TOR.

## 2. Gap Analysis & Recommendations

The Gap Analysis has been organized to be consistent with the Town of Caledon ToR for Subwatershed Studies requirements. It is sorted by technical discipline, with each discipline having a breakdown of responses that refer to available background documentation and recommendations on completed work. Below, tables are categorized by discipline: **Table 1** covers Hydrology, **Table 2** focuses on Hydraulics, **Table 3** addresses Hydrogeology, **Table 4** is dedicated to Stream Morphology, **Table 5** pertains to the Aquatic Environment, **Table 6** deals with the Terrestrial Environment, and **Table 7** examines Surface Water Quality.

Specific recommendations are made in each table to identify the following:

1. Where work required in the ToR has already been completed;
2. Where additional technical studies are needed at the OPA stage; and
3. Where the required technical studies should be completed during later design stages (e.g., detailed design).

This Gap Analysis should be read in conjunction with the revised MW2-3 CEISMP (Palmer, June 2024) and the comment / response matrix to the first submission comments from the Town of Caledon, the Region of Peel and TRCA.

## *Table 1. Hydrology*

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 1 | 1 | Complete hydrologic model<br>*** The updated model should be reviewed by TAC, and future modeling will be used to determine potential impacts on surface water, groundwater, and water budget* | AMEC Part A, 2014; Appendix D. TRCA 2022 | Hydrologic model undertaken by TRCA (2022) on Etobicoke Creek watershed, 100 year and regional storm events included in the mapping. Development setbacks have been based on 2022 flood hazard mapping and setbacks. Minor cut/fill assessment needed during detailed design to address flood storage on tableland areas similarly to how flood storage was mitigated on the approved MW2-2 Lands.<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 2 | 1 | Complete Erosion Potential Assessment, including continuous simulation of watercourse flows over a suitable period of time, to evaluate the duration of critical discharge exceedance, cumulative erosion index (Ontario Ministry of Environment, 2003), cumulative effective work (per TRCA SWM Criteria, 2012), and other methodologies proposed by the study team stream morphologist (e.g. cumulative effective discharge, number of exceedances), to determine erosion thresholds (discharge, velocity and shear stress) established by the study stream morphologist and the associated guidance on the appropriate methodology. | AMEC Part A, 2014; pg. 52, Section 4.3.5. TRCA 2022 | All SWM Ponds will be designed to control for storm flow and erosion control. This has been included in the 2024 CEISMP Report for the MW2-3 Lands.<br><br>**ToR requirement met through updated CEISMP Report. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 3 | 2 | Hydrologic analysis for initial future development land use concept model | | As the client owns nearly 60% of the MW2-3 Lands, Hydrologic analysis for future development scenarios are recommended to be completed as part of the Draft Plan Application (DPA) using the Draft Plan of Subdivision land use for a more comprehensive assessment. |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| | | | | **Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 4 | 2 | Generate a hydrologic model that is modified to reflect post-development conditions (with peak flows ranging from 2,5,10,25, 50, 100, and 350 year and the Regional Storm. | AMEC Part B, 2014; pg. 33. TRCA 2022 | Hydrologic model undertaken by TRCA (2022) on Etobicoke Creek watershed, 100 year and regional storm events included in the mapping. Development setbacks have been based on 2022 flood hazard mapping and setbacks.<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 5 | 2 | Delineate drainage area plan based on future development | AMEC Part B, 2014; pg. 29. TRCA 2022; FSS, pg 10. | The Draft Plan of Subdivision drainage plan is known for the Brookvalley owned lands and have been delineated in the 2024 Candevcon FSR. Details on drainage area plans for other landowners to be completed during DPA stage.<br><br>**Addressed through Preliminary FSS (Candevcon, 2024). Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 6 | 2 | Calculate post-development flows for all event storms at predetermined locations as per the discrete drainage area plan and model schematic diagram within the study area. Validated by conservation authority | FSR, 2024 | The Draft Plan of Subdivision drainage plan is known for the Brookvalley owned lands and have been delineated in the 2024 Candevcon FSR. Pre- to post-development flows have been delineated for the proposed SWM Ponds. Details on drainage area plans for other landowners to be completed during the respective DPA stage by others.<br><br>**Addressed through Draft Plan FSR (Candevcon, 2024). No Data Gap.** |
| 7 | 2 | Conduct water budget assessment at the nodes of interest coordinated with the groundwater modeling | Palmer Hydrogeology Report (2022). CEIMSP (2022, updated 2024) | Pre- to post-development water budget assessment completed. Strategies to maintain groundwater supported baseflow in areas of interest included in the Hydrogeology Report.<br><br>**Work completed as part of Hydrogeological Reporting in CEISMP (Palmer, 2024). No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 8 | 2 | Identify constraints related to imperviousness and intensity of development. Assess the requirement and or performance of proposed stormwater management facilities including the potential approach for regulatory flow impact management per the details outlined in the regional scoped SWS | AMEC Part B, 2014; Pg. 33 Wood SWS, 2022, pg. 33-38; FSR, 2024 | As outlined in the Candevcon FSR (2024), all SWM Ponds will be designed to control for storm flow and erosion control.<br><br>**Work completed in Candevcon FSR (2024). No Data Gap.** |
| 9 | 2 | Assess the future drainage impacts (both flows and erosion potential) on the local systems and broader creek systems based on the methods completed as part of the Phase 1 hydrologic assessment (Critical discharge, cumulative erosion index, and cumulative effective work), in coordination with the Study Team Stream Morphologist | AMEC Part B, 2014; pg. 35-37; FSR, 2024 | As outlined in the Candevcon FSR (2024), all SWM Ponds will be designed to control for storm flow and erosion control.<br><br>**Work completed in Candevcon FSR (2024). No Data Gap.** |
| 10 | 2 | Complete a climate change assessment: consisting of evaluating the hydrologic impacts for the projected drainage design storms and 4 locally historic storms, and the formative time series for 4 formative storm events that occurred in other jurisdictions | Wood SWS, 2022, pg. 121-122, FSS, 2024 | Climate change effects and mitigation measures are discussed in the Candevcon 2024 FSR and identifies that climate change impacts related to SWM shall be identified in the individual draft plan FSRs with recommendations of possible mitigations such as LID measures, resiliency in design, homeowner awareness, etc. These remediation methods will be further refined at the detailed design stage.<br><br>**Addressed through Preliminary FSS (Candevcon, 2024). Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 11 | 2 | Any preliminary stormwater management strategies, required to match the post-development flows to existing conditions | AMEC Part B, 2014; pg. 37-42 | As outlined in the Candevcon FSR (2024), all SWM Ponds will be designed to match pre-development flows.<br><br>**Work completed in Candevcon FSR (2024). No Data Gap.** |

## *Table 2. Hydraulics*

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 12 | 1 | Local SWS (Sub watershed Study): Inventory of Creeks; road crossings (culverts and bridges), stormwater facilities etc., including current drainage constraints and opportunities | Wood SWS Part A, 2022; pg. 54-55 Section 2.3.3 Map SM-1 (plates to 1-24) Appendix E | All creeks and road crossings have been identified in the Wood SWS (2022) and the Palmer CEISMP (2024). No SWM facilities currently exist on the MW2-3 Lands.<br><br>**Work completed as part of background reports and Palmer CEISMP. No Data Gap.** |
| 13 | 1 | Hydraulic modeling is to define flood hazards and system constraints | Wood SWS Part A, 2022; pg 53 | Hydrologic model undertaken by TRCA (2022) on Etobicoke Creek watershed, 100 year and regional storm events included in the mapping. Development setbacks have been based on 2022 flood hazard mapping and setbacks. Minor cut/fill assessment needed during detailed design to address flood storage on tableland areas similarly to how flood storage was mitigated on the approved MW2-2 Lands. To be refined at Detailed Design.<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 14 | 1 | Established and regulated watercourses located in the study area, complete hydraulic analyses | Wood SWS Part A, 2022; pg. 53 | Hydrologic model undertaken by TRCA (2022) on Etobicoke Creek watershed, 100 year and regional storm events included in the mapping. Development setbacks have been based on 2022 flood hazard mapping and setbacks. Minor cut/fill assessment needed during detailed design to address flood storage on tableland areas similarly to how flood storage was mitigated on the approved MW2-2 Lands. To be refined at Detailed Design.<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 15 | 1 | Floodplain mapping - Based on Hydraulic modeling using the latest Hydrologic Engineering Centers River Analysis System (HEC-RAS) model from the US Army Corps of Engineers, prepare preliminary floodlines for land use planning purposes, not intended to be formal floodline mapping study. Including flood lines for the regulatory event and/or 100 yr storm.<br><br>Future land use flood lines (where changes are considered) are to be presented on maps with regulatory flood event line locations and cross sections identified with flood elevations.<br><br>Flood plain maps should confirm the post-development flood levels are consistent with the current condition, any changes in flood inundation magnitude must be listed in inventory with explanations. | Wood SWS Part A, 2022, pg. 53 | Hydrologic model undertaken by TRCA (2022) on Etobicoke Creek watershed, 100 year and regional storm events included in the mapping. Development setbacks have been based on 2022 flood hazard mapping and setbacks. Minor cut/fill assessment needed during detailed design to address flood storage on tableland areas similarly to how flood storage was mitigated on the approved MW2-2 Lands. To be refined at Detailed Design.<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 16 | 2 | Existing conditions reviewed based on the proposed development (land use changes, runoff increases, and or channel modifications) | Palmer CIESMP, 2024; FSR, 2024 | As outlined in the Candevcon FSR (2024), all SWM Ponds will be designed to match pre-development flows. To be updated at Detailed Design.<br><br>**Work completed as part of Candevcon FSR (2024). No Data Gap.** |
| 17 | 2 | Watercourses receiving additional flow - describe impacts of the proposed development on water course water levels, flow velocity, and water surface profiles for all storm events | Wood SWS Part B, 2022, pg. 79 - 80 | All SWM Ponds will be designed to match pre-development flows. To be updated at Detailed Design.<br><br>**Work completed as part of Candevcon FSR (2024). No Data Gap.** |
| 18 | 2 | Describe any potential risk of erosion based on critical erosion parameters and or flood risk concerns due to the development | Wood SWS part B, 2022, pg. 80 - 81 | The Candevcon FSR (2024) and the Palmer CEISMP (2024) provide a discussion on erosion and flood mitigation. Detailed assessments will be completed as part of detailed engineering design works. |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| | | | -updated hazard mapping is provided in SM-2 Appendix C | **ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 19 | 2 | Current flood line information should be updated for the post-development scenarios, and the model should be reviewed and approved by the TAC | Wood SWS Plan B; pg. 7 | Hydrologic model undertaken by TRCA (2022) on Etobicoke Creek watershed, 100 year and regional storm events included in the mapping. Development setbacks have been based on 2022 flood hazard mapping and setbacks. Minor cut/fill assessment needed during detailed design to address flood storage on tableland areas similarly to how flood storage was mitigated on the approved MW2-2 Lands. To be refined at Detailed Design.<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |

## *Table 3. Hydrogeology*

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 20 | 1 | Geologic Conceptual model for the Study Area; Bedrock and overburden systems, and their functions in controlling groundwater movement, availability and quality in the sub-watershed, and groundwater-surface water interaction (link to ecosystem) | Palmer CEISMP (2024); Palmer HIA, 2024; pg. 6, section 2.1.4<br>-GW/SQ interactions: Section 3.4.6.2 | A complete description of the geological and hydrogeological model for the MW2-3 Lands is included in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 21 | 1 | Establish an understanding of the effects of future development on groundwater resource | Palmer CEISMP (2024); Palmer HIA, 2024: Section 5.2, pg. 45 | Palmer CEISMP discusses potential impacts to recharge and discharge functions, to groundwater users and to groundwater-supported natural features. Mitigation measures are proposed where appropriate.<br><br>**Work completed. No Data Gap.** |
| 22 | 1 | The presence of potentially significant local recharge areas, linked with local discharge | Plamer HIA, 2024, pg. 45, section 5.4 | Groundwater recharge and discharge relationships as determined from 3-years of monitoring are discussed in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 23 | 1 | Shallow depth to groundwater: upward gradients | Plamer CEISMP (2024) | Groundwater monitoring results and depth to the groundwater table and potential for artesian conditions is presented in Palmer CEIMSP (2024).<br><br>**Work completed. No Data Gap.** |
| 24 | 1 | Describe the groundwater/surface water interaction | Palmer CEISMP (2024)<br><br>Palmer HIA, 2024; pg. 28-32, Section 3.4.6 | Groundwater recharge and discharge relationships as determined from 3-years of monitoring are discussed in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 25 | 1 | Describe any future dewatering needs | | Any future dewatering needs will be addressed in future design stages. Based on the depth to groundwater and the soil permeability, dewatering for the MW2-3 development is expected to be negligible to minor.<br><br>**To be addressed during later design stages. No Data Gap.** |
| 26 | 1 | Describe any seepage areas | Palmer HIA, 2024; pg. 32, section 3.4.6.2 | Groundwater recharge and discharge relationships as determined from 3-years of monitoring are discussed in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 27 | 1 | Report on existing tile drainage on the site | Wood (2022), Part B, Pg. 3 | No tile drains were reported on the site.<br><br>**Work completed. No Data Gap.** |
| 28 | 1 | Hydrogeological Impact Assessment must include:<br>-Monitoring well installation with borehole logs, Drive point piezometers manual and continuous water level measurements, groundwater and surface water chemistry, Hydraulic conductivity measurements, and Spot baseflow measurements | Palmer CEISMP (2024.<br><br>Palmer HIA (2024), pg. 10-32, sec. 3, Appendix B | A completed Hydrogeological Impact Assessment based on data collected between 2017 and 2024 is included in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 29 | 1 | Refined geologic and hydrostratigraphy, understanding of observed shallow groundwater conditions as they relate to response to storm events, refined mapping and interpretations of groundwater discharge areas (sub-watershed scale and reach scale), refinements to our understanding of groundwater flow including contributions from outside the sub-watershed. | Palmer HIA (2024), pg. 6, sec 2.1.1, pg. 12-13, sec. 3.2, and pg. 17-20, sec. 3.3 | Refinements to the understanding of geological and hydrogeological conditions is outlined in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 30 | 1 | Baseline groundwater conceptual model and more detailed numerical groundwater model should also include observations of seepage and discharge fish habitat, phreatophytic observations, streambed composition, and low flow analysis and water quality. | Palmer CEISMP (2024); Palmer HIA, 2024, pg. 17-20, Section 3.3 | Refinements to the understanding of geological and hydrogeological conditions is outlined in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 31 | 1 | SABE Scoped sub-watershed Study: existing conditions water balance for focus Study Area utilizing the water balance parameters estimated from an Oak Ridges Moraine Groundwater Program Model, and can be compared to the baseline hydrological water balance. | Palmer HIA, 2024, pg. 36, Section 4 | A site wide water balance assessment for pre- to post-development conditions is included in the Palmer CEISMP (2024) for the OPA and the Hydrogeological Investigation Report (2024) for the DPA.<br><br>**Work completed. No Data Gap.** |
| 32 | 2 | HIA report to present impact analysis on sensitivity of the groundwater flow system to changes in land use resulting from a potential reduction in recharge. | Palmer HIA, 2024, pg. 45, section 5.3 | A hydrogeological impact assessment is included in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 33 | 2 | Ensure groundwater-sensitive areas are recognized and protected from future urbanizing and disturbances | Palmer HIA, 2024, pg. 44, Section 5 | Groundwater-sensitive areas have been identified for the MW2-3 Lands and specific recommendations for development of these areas is included in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 34 | 2 | Water Balance Assessment: update the overall groundwater budget model along with the surface water components for both existing and future scenarios (Pre-Post) with integration and comparison to the hydrogeologic model. Water balance should estimate precipitation, evapotranspiration, runoff, and infiltration, in addition to groundwater recharge and discharge. | Plamer HIA, 2024, pg. 36 | A site wide water balance assessment for pre- to post-development conditions is included in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 35 | 2 | Hydrogeological Impact Assessment (HIA) Report to account for needs within the source water protection plan | Palmer HIA, 2024, pg. 43, section 5.4 | Source Water Protection considerations have been included in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024).<br><br>**Work completed. No Data Gap.** |
| 36 | 2 | Groundwater impact assessment should be integrated with the ecological component impact assessment (groundwater function and water table depth). | Palmer CEISMP (2024) | The Palmer CEISMP (2024) presents an integrated and multi-disciplinary effects assessment (including ecological, hydrogeological), and Constraints and Opportunity mapping.<br><br>**Work completed. No Data Gap.** |
| 37 | 3 | Groundwater management strategies - include technical input (quantitative and qualitative) to determine hydrogeologically sensitive areas, relating to discharge and recharge, Groundwater gradients, and potential location and function of stormwater management facilities and other BMP (LIDs), and policy recommendations for quantity and quality protection. | Palmer CEISMP 2024 | Groundwater management strategies including the use of LIDs is provided in the Palmer CEISMP (2024) and the Hydrogeological Investigation Report (2024). Additional assessment to support LID design and locations to be completed during Detailed Design.<br><br>**Work completed. No Data Gap.** |

## *Table 4. Stream Morphology*

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 38 | 1 | Surface Water feature types should be defined and identified as a reach delineation is performed (mapping and field visits) | AMEC (2014); Palmer, CEISMP 2024 | Surface water features and reaches have been defined in the AMEC CEIMSP (2010) and the Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |
| 39 | 1 | Baseline morphologic assessment including a detailed inventory of steam morphology observations | AMEC (2010); Palmer, CEISMP 2024 | Morphological assessments were completed as part of the AMEC CEISMP (2014). The CEISMP (Palmer, 2024) also presents a discussion on study area watercourses.<br><br>**ToR requirement met through background reports and CEISMP (2024). No Data Gap.** |
| 40 | 1 | Erosion potential analysis (desktop and field) - identify sites most sensitive to erosion | AMEC (2014); Palmer, CEISMP 2024 | As part of the AMEC CEISMP (2010), Terraprobe (2009) concluded that there was no obvious evidence of active slope toe erosion. However, some localized areas within the Etobicoke Creek valley had minor evidence bank undercutting, exposed roots and bare areas associated with toe erosion. The majority of the slopes within the MW2-3 study area are expected to be stable and that the existing top of slope is considered to the long-term stable slope crest for the establishment of development limit setbacks. The only areas where an additional setback is required are the slopes west of Hurontario Street and South of Old School Road where cohesionless sands and silts were found near the surface (CEISMP Figure 6).<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 41 | 1 | Erosion hazard delineation for each watercourse reach, and erosion hazards evaluated against proposed land use plan | AMEC (2014); Palmer, CEISMP 2024 | As part of the AMEC CEISMP (2010), Terraprobe (2009) concluded that there was no obvious evidence of active slope toe erosion. Field observations completed by Palmer as part of the 2022 and 2024 CEISMP have also not |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| | | | | identified obvious evidence of active slope toe erosion. Soil Engineers Ltd (SEL) has also completed geotechnical hazard assessments as part of the DPS. Additional assessments can be completed during Detailed Design based on the land use plan.<br><br>**ToR requirement met through background reports. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 42 | 1 | Assessment of Watercourse Constraints | Palmer, CEISMP 2024, Fig 14 | Constraints map included in the Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |
| 43 | 1 | Assessment of HDF | Palmer, CEISMP 2024 | HDF assessments were completed by Palmer in spring 2024 as part of the CEISMP (2024) update. This work builds upon the HDF assessment completed as part of the AMEC CEISMP (2014). The AMEC and Palmer conclusions regarding HDF classification and management are consistent.<br><br>**Work completed. No Data Gap.** |
| 44 | 2 | Continuous erosion updated with future development scenarios | Wood 2022, pg. 91 | All SWM Ponds will be designed to control for storm flows and erosion control. We will review the 2yr and 5yr storm flow velocities against the established Erosion Thresholds. Additional assessments can be completed during Detailed Design based on the land use plan.<br><br>**To be addressed during detailed engineering design. No Data Gap.** |
| 45 | 2 | Estimate erosion potential | Palmer, CEISMP 2024; SEL (2023) | All SWM Ponds will be designed to control for storm flows and erosion control. We will review the 2yr and 5yr storm flow velocities against the established Erosion Thresholds. Additional assessments can be completed during Detailed Design based on the land use plan. Soil Engineers Ltd (SEL) has also completed geotechnical hazard assessments as part of the DPS. There is a small area approximately 350 m west of Hurontario, south of Old School Road |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| | | | | where sandy soils are present at surface that is expected to require additional assessment for erosion potential.<br><br>**ToR requirement met through background reports and recent SEL Reporting. Site specific details to be addressed through detailed engineering design. No Data Gap.** |
| 46 | 2 | Recommend mitigation measures | - | General mitigation measures are provided in the Candevcon FSR (2024) report. Additional mitigation measures will be provided at Detailed Design.<br><br>**To be addressed during later design stages. No Data Gap.** |
| 47 | 2 | Use erosion thresholds | Palmer, CEISMP 2024 | Targeted erosion threshold surveys should be conducted at SWM pond outfall locations once their locations and outlet locations are confirmed.<br><br>**To be addressed during later design stages. No Data Gap.** |
| 48 | 2 | Identify watercourses and HDF that are stable and maintained/need restoration or relocation | Palmer, CEISMP 2024 | HDF assessments were completed by Palmer in spring 2024 as part of the CEISMP (2024) update. This work builds upon the HDF assessment completed as part of the AMEC CEISMP (2014). No watercourse restorations are proposed for the MW2-3 Lands.<br><br>**Work completed as part of CEISMP (2024). No Data Gap.** |
| 49 | 2 | Stream morphology should be assessed downstream of future development areas | Wood 2022, page 11 | Stream morphology described in the Wood SWS report (2022) for downstream reaches.<br><br>**ToR requirement met through background reports. No Data Gap.** |
| 50 | 2 | Natural channel design strategy | Wood 2022, pg. 27 | No action required. No realignments proposed.<br>**No Data Gap.** |

## *Table 5. Aquatic Environment*

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 51 | 1 | Characterize aquatic environment (information on flow, thermal regime, fish communities, SAR, benthics) | Palmer, EIS; AMEC, 2014, page 69; Palmer CEISMP (2024). | Aquatic environment characterized as part of AMEC (2010) and Palmer CEIMSP (2024).<br><br>**Work completed. No Data Gap.** |
| 52 | 1 | Baseline monitoring should be established and monitored (representative of larger reaches) | AMEC, 2014, page 69; Palmer CEISMP (2024). | Baseline monitoring results from TRCA monitoring of aquatic sites in the MW2-3 area included in the Palmer CEIMSP (2024) report. TRCA monitoring is expected to be on-going.<br><br>**Work completed. No Data Gap.** |
| 53 | 2 | Assess potential impacts and opportunities for enhancement | Palmer, EIS (2024); Wood (2022). Palmer CEISMP (2024). | Refer to Palmer CEISMP (2024) Figure 11 for Opportunities and Constraints Mapping.<br><br>**Work completed. No Data Gap.** |
| 54 | 2 | Assess the effects of the anticipated changes to aquatic habitat | Wood 2022, page 10; Palmer EIS (2024). Palmer CEISMP (2024). | Refer to Palmer CEISMP (2024) for an impact assessment for changes to aquatic habitat.<br><br>**Work completed. No Data Gap.** |
| 55 | 2 | Presence and role of aquatic features and functions (thermal regime, species diversity, water quality and quantity, long-term protection) | Palmer EIS (2024). Palmer CEISMP (2024). | Information on aquatic features and functions (thermal regime, species diversity, water quality and quantity, long-term protection) included in Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 56 | 3 | Watercourse management recommendations | Palmer CEISMP (2024). | Refer to Palmer CEISMP (2024) for management recommendations for aquatic habitat.<br><br>**Work completed. No Data Gap.** |
| 57 | 3 | HDF management recommendations | Palmer CEISMP (2024). | Refer to Palmer CEISMP (2024) for HDF management recommendations.<br><br>**Work completed. No Data Gap.** |

## *Table 6. Terrestrial Environment*

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 58 | 1 | Review Regional Scoped SWS (landscape screening based on existing desktop information) | Palmer EIS, 2024 | The Wood SWS (2022) has been reviewed and results incorporated in to the CEIMSP Report.<br><br>**Work completed as part of background studies. No Data Gap.** |
| 59 | 1 | Consult with CA and Caledon | Palmer EIS, 2024; Palmer CIESMP, 2024 | Discussions with the TRCA and Town have occurred in 2022-2024 and a 1st submission review of the 2022 Palmer CEISMP has been completed.<br><br>**Work completed. No Data Gap. Further consultation will occur as part of the development application process.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 60 | 1 | Complete SWH analysis | Palmer CIESMP, 2024 | Field surveys in 2024 have been used to inform the assessment of SWH. An updated SWH table specific for Caledon, Peel Region is provided in the Palmer CEISMP (2024). Figure 11 presents Palmer's recommendations for SWH on the MW2-3 Lands. Some minor additional data will be collected in spring 2024 to confirm the SWH assessment.<br><br>**Completed as part of CEISMP (2024). No Data Gap.** |
| 61 | 1 | Maps that identify natural heritage features and results of investigations | Palmer CIESMP, 2024 | Natural heritage features were first identified by AMEC (2010) and have been verified ad updated in Palmer's CEISMP (2024).<br><br>**Completed as part of CEISMP (2024). No Data Gap.** |
| 62 | 1 | Ecological Land Classification (ELC) | Palmer CIESMP, 2024, Fig. 4; Palmer EIS, 2024 | ELC was first mapping by AMEC (2010) and have been verified and updated in Palmer's CEISMP (2024).<br><br>**Completed as part of CEISMP (2024). No Data Gap.** |
| 63 | 1 | Flora Surveys | Palmer CIESMP, 2024; Palmer EIS, 2024 | Palmer has 1 survey proposed for 2024. Results will be provided in the updated Palmer EIS. Further surveys may be requested by the Town.<br><br>**Completed as part of CEISMP (2024) and EIS for Draft Plan. No Data Gap.** |
| 64 | 1 | Woodland Evaluations | Palmer CIESMP, 2024; Palmer EIS, 2024 | Palmer has verified our opinion on the woodland communities through work completed as part of the CEISMP (2024).<br><br>**Completed as part of CEISMP (2024). No Data Gap.** |
| 65 | 1 | Unevaluated Wetland Evaluations | Wood (2022), Pg. 105, Fig. DA2-2e | Wetland have been assessed and evaluated as part of Palmer's CEIMSP (2024) report. |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| | | | | **Work completed. No Data Gap.** |
| 66 | 1 | Breeding Bird surveys | AMEC 2014; Palmer CIESMP, 2024; Palmer EIS, 2024 | A discussion of bird species in the MW2-3 study area is presented in AMEC (2014) and Palmer CEISMP (2024). Palmer will complete 2 breeding bird surveys (3 in grassland areas) in spring 2024. Results will be included within the Palmer EIS provided as part of the Draft Plan Application.<br><br>**Completed as part of CEISMP (2024) and EIS for Draft Plan. No Data Gap.** |
| 67 | 1 | Reptile surveys | Palmer CIESMP, 2024; Palmer EIS, 2024 | Incidentals will be recorded during all 2024 site visits. No obvious hibernacula or over wintering areas outside of the NHS was identified. Targeted surveys may be requested by the Town or CA.<br><br>**Work completed. No Data Gap.** |
| 68 | 1 | Amphibian surveys | Palmer CIESMP, 2024; Palmer EIS, 2024 | Palmer has completed 2 rounds of amphibian surveys in 2024 and the results are included in the CEIMSP.<br><br>**Completed as part of CEISMP (2024) and EIS for Draft Plan. No Data Gap.** |
| 69 | 1 | Incidental Wildlife | Palmer CIESMP, 2024; Palmer EIS, 2024 | Incidentals will be recorded during all 2024 site visits. Results will be provided in Palmer CEISMP and future EIS for DPA.<br><br>**Work completed. No Data Gap.** |
| 70 | 1 | SAR screening | Palmer CIESMP, 2024; Palmer EIS, 2024 | Updated screening and surveys have been completed in 2024 and included in the Palmer CEIMSP (2024). Additional targeted surveys for SAR may be requested (i.e. bats).<br><br>**Completed as part of CEISMP (2024) and EIS for Draft Plan. No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 71 | 1 | SWH screening | Palmer CIESMP, 2024; Palmer EIS, 2024 | An updated SWH table specific for Caledon, Peel Region has been provided in the Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |
| 72 | 2 | Mitigation measures (buffers, setbacks) | Palmer CIESMP, 2024, Fig. 4 | A development Constraints and Opportunities assessment as well as an Impact Assessment is included in the Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |
| 73 | 2 | Linkages | D&A / Wood SWS - Linkages (DA2-10) and Enhancements (DA2-11a); As stated in AMEC (pg 25, 2010): Fletcher Creek Studies (multiple) - mainly the EIR for Fletchers Meadow Secondary Planning Area (1997) | The Wood SWS (2022) presents a series of wildlife linkage corridors. These recommendations have been incorporated in the Palmer CEISMP (2024).<br><br>**ToR requirement met through background reports and CEISMP (2024). Site specific details to be addressed during Detailed Design.** |
| 74 | 2 | Land use considerations (impacts and opportunities for road and trail networks) | Palmer, CEISMP, page 45 | Some encroachment into setbacks and buffers (e.g., grading, trails, SWM Ponds) may be proposed subject to consultation with the agencies.<br><br>**Work completed. No Data Gap.** |

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 75 | 3 | Avoidance is required for key features | Palmer, CEISMP (2024) | A development Constraints and Opportunities assessment as well as an Impact Assessment is included in the Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |
| 76 | 3 | Linkage recommendations | Palmer, CEISMP (2024); Wood SWS (2022) | The Wood SWS (2022) presents a series of wildlife linkage corridors. These recommendations have been incorporated in the Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |
| 77 | 3 | Enhancement recommendations | Palmer, CEISMP (2024) | A development Constraints and Opportunities assessment as well as an Impact Assessment is included in the Palmer CEISMP (2024). A discussion of enhancement opportunities is provided in the CEISMP as well as part of the Region of Peels new OP policies that were developed as an outcome of the Wood SWS (2022). Additional discussion and details on enhancement opportunities to be provided during later deign stages, in consultation the TRCA and the Town.<br><br>**Work completed. No Data Gap.** |
| 78 | 3 | Compensation management strategies | Palmer, CEISMP (2024) | A development Constraints and Opportunities assessment as well as an Impact Assessment is included in the Palmer CEISMP (2024). A discussion of enhancement opportunities is provided in the CEISMP as well as part of the Region of Peels new OP policies that were developed as an outcome of the Wood SWS (2022). Additional discussion and details on enhancement opportunities to be provided during later deign stages, in consultation the TRCA and the Town.<br><br>**Work completed. No Data Gap.** |

## *Table 7. Surface Water Quality - Stream Water Quality*

| Comment No. | ToR Phase # | ToR Requirements – Summarized | Reference to Background Documents [report, page] | ToR Requirement Status and Recommendations to Address Data Gap(s) |
|---|---|---|---|---|
| 79 | 1 | Existing water quality status (review existing datasets for baseline water quality)<br>Surface water quality monitoring at the same location as streamflow gauging (April - December) - collect water quality grab samples and analyze for listed contaminants | AMEC 2010, Part A, pg. 34<br>CIESMP 2024, | Background samples have been collected and documented in the Palmer CEISMP (2024).<br><br>**Work completed. No Data Gap.** |
| 80 | 1 | Inventory existing SWM facilities | - | No existing SWM facilities on site.<br><br>**No Data Gap.** |
| 81 | 2 | Assess impacts and strategy to maintain/enhance in-stream water quality | AMEC 2014, CIESMP 2024; FSR (2024); FSS (2024) | SWM measures are discussed in the Candevcon FSS (2024) and FSR report (2024).<br><br>**Work completed. No Data Gap.** |
| 82 | 2 | Actions to avoid pollution and Best Management Practices for stormwater management strategies | AMEC 2014, CIESMP, Part C, Section 4.4.1.2 pg. 84-85 | SWM measures are discussed in the Candevcon  Candevcon FSS (2024) and FSR report (2024). BMPs will be implemented as appropriate.<br><br>**Work completed. No Data Gap.** |