

**DRAFT COLONEL TALBOT PROPERTY SUBJECT LANDS STATUS REPORT**

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at EEPAC January 19, 2017

Reviewers: C. Evans, S. Levin, A. Regehr, R. Trudeau, I. Whiteside  
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The main issues for phase 1 of this development:

1. The proposed re-location of the Significant Wildlife Habitat. EEPAC is also concerned that Pond A was drained in 2016 without a permit from the UTRCA, and Pond B, on the adjoining property, was drained. EEPAC notes that Pond B was assessed by NRSI in 2013 as a deciduous swamp surrounded by meadow marsh (page 21 SLSR). It appears it too was removed without a permit.

In its 2015 Environmental Assessment for the SWM facility south of Pack Road west of Colonel Talbot, Parsons noted that this area is part of the drainage area for Mathers Stream, the tributary of Dingman Creek that flows from west to east on the other side of Col. Talbot Road. Parsons also notes on page 42 of the EA that “there are additional flows to Mathers Stream from the 600 mm culvert under Colonel Talbot Road which contributes flows from the south east corner of Pack Road and Colonel Talbot. It is unclear how much flow has been interrupted due to the draining of Pond A.

2. Clarification is required with respect to the water balance calculations. Specifically, the size of Area 01 and the differing assumptions as to the size of the pervious area in Area 01 and Area 02. We have concern that the post development infiltration calculations over-represent the amount that will actually infiltrate, which is of notably concern given the south-west corner of the site is a Significant Groundwater Recharge Area with Vulnerability Rating of 6.

**Theme #1 – Water balance calculations**

The water balance calculations require additional clarification. We observed the following inconsistencies in the pre and post development water balance calculations:

- Catchment Area 01 is referenced in size at 5.1 hectares; however, the total area used in the calculation in Appendix I is 117,051 m<sup>2</sup> (11.7 hectares), and consequently, the calculated pre and post development infiltration volumes appear to be overstated.
- The post-development assumptions with respect to the pervious and impervious surface area differ between Area 01 and Area 02. Area 01 is assumed to be 73.9% pervious while Area 02 is assumed to be 40% pervious. The site plan for

the development appears to have a similar level of development in both areas, and so the percent of area that is pervious in Area 01 appears to be overstated.

The net impact from these two assumptions is the post-development infiltration rates may be overstated by as much as 65%. Given that Conservation Ontario Guidelines suggest a target of 80% of predevelopment infiltration be maintained in post development conditions, additional mitigation measures may be required to achieve the 80% target. Lastly, we note that the south-western portion of the site includes a Significant Groundwater Recharge Area with Vulnerability Rating of 6, and as such, it is important to maximize the level of groundwater infiltration relative to pre-development conditions in order to protect the Highly Vulnerable Aquifer as a groundwater resource.

**Recommendation 1:** The assumption set within the water balance assessment need to be revisited to ensure their correctness. Should the recalculated groundwater infiltration rates be lower than currently estimated, additional mitigation techniques beyond those currently recommended should be employed such that the post-development infiltration rate is no less than 80% of the pre-development infiltration rates.

### **Theme #3 – Groundwater levels**

We note that the groundwater levels were measured in January, which is the seasonal low point for precipitation in the area; three of the four monitoring wells were dry when measured. As such, the report may not have correctly characterized the hydraulic conditions on site.

**Recommendation 2:** Additional groundwater measurements should be obtained during periods of increased precipitation (Spring and Fall) to assess seasonal variations in groundwater levels and the near surface hydraulic conditions.

### **Theme #4 – Wetland features**

The report noted that the three wetland features present on site were potentially connected to the pond located at 6499 Pack Road. Based on the site design, these three wetland features will not exist post development.

**Recommendation 3:** Investigate the feasibility of creating offsetting wetland areas to compensate for the three wetland features that will be lost with this development. As the existing wetland features are potentially connected to the pond at 6499 Pack Road, that area could be suitable for wetland relocation.

**THEME #2 – Relocation of Significant Wildlife Habitat**

EEPAC reminds staff and the proponent that development will not be permitted within the SWH unless it can be demonstrated that there will be no negative impacts on the feature or its ecological function (OMNRF 2014). The ELC ecosite that contains the terrestrial crayfish burrow(s) is a SWH. (SWHMiST 2014, p. 391)

It is clear from the SLSR that terrestrial crayfish are well established around the MAM2-2 on the subject lands. The adjacent FOD / Shallow Water ecosite was also identified as SWH. EEPAC has mixed opinions regarding the relocation of Significant Wildlife Habitat. It is only aware of one such case in London (905 Sarnia Road). This has taken place in the last year and EEPAC has not received any reports on the success or failure of the relocation. Hence our caution.

EEPAC notes from the Geotechnical and Hydrogeological Assessment by exp that the soil conditions vary on the site and that no investigation of the soils around the SWH took place. Therefore, it is unclear as to how this area maintained sufficient moisture to maintain such a large colony of terrestrial crayfish.

*Surface water that is directed toward crayfish habitat has the potential to have adverse effects as this may result in flooding of burrows, unstable water levels within burrows and introduction of contaminants into the crayfish habitat (e.g., urban and industrial pollution, road runoff). Additionally, surface water has the potential to introduce sediments into crayfish habitat. If the clay and silty-clay soils that they require become covered with other sediments, the soils may not be suitable for burrowing or constructing chimneys. (SWHMiST 2014, p. 391)*

*Development on adjacent land also has the potential to affect populations of burrowing crayfish. Activities that result in a change in the water table (drainage works, flow diversions, piping watercourses, etc.) may either result in flooding of burrows or making the soils too dry to support crayfish. Higher water tables may result in asphyxiation of crayfish if the burrow becomes filled with water too near the surface. Crayfish may also be forced to move to adjacent areas where the water table is lower to obtain the correct mix of air and water within the burrow. If the water table declines or if areas are drained/dewatered, the soil may become too hard and dry for the crayfish to burrow in it, or they may have to burrow an excessive depth to reach water. (ibid.)*

*Development within habitat for the Meadow and Chimney Crayfish will result in direct loss of their habitat and possibly extirpation of the local population. (SWHMiST 2014, p. 390).*

Hence the following recommendation regarding the proposed relocation.

**Recommendation 4:** Detailed study (including a water balance study) of the soil and groundwater conditions be undertaken. If a suitable site for relocation is not found on the subject lands, alternative sites outside the subject lands must be used. These could include, but not be limited to, the ESA adjacent to Mather Stream on the west side of Col. Talbot Road (owned by the owner of the lands containing Pond B), or the OS1 lands in the Talbot Village development to the north.

EEPAC cautions that the lands to the north may not be suitable as the Beacon report to the City (*EIS Performance Evaluation*, p. 30) noted that there have been changes in community types in the Talbot Village wetland and dumping; introduction of trees, shrubs, ornamentals, food crops, mown grass, trails, bird feeders, mulch, flagstones, and trails. There is a paved path adjacent to this area as well.

**Recommendation 5:**

- a. At the new site surface water runoff needs to be directed away from potential crayfish burrows to avoid sedimentation that adversely affects the crayfish's ability to dig burrows. (SWHMIST 2014, p. 392)
- b. Suitable vegetation must be at the new site to provide forage for the crayfish.

**Theme #5 – Species at Risk**

Barn swallows were noted as foraging in the area. The consultants identified that it is possible that nesting sites would be found in buildings.

**Recommendation 6:** The breeding status of Barn Swallow and any use of the existing buildings/structures on site must be confirmed prior to any building/structure demolition or site development. (p. 27, SLSR). If nests are found, there is an MNRF protocol that must be followed.

Page 28 of the SLSR indicates that the regionally rare Common Evening Primrose was found on site. The consultant recommended it be moved late 2016 or early 2017. There is no information if this was done or to where the plants were moved.

**Recommendation 7:** The proponent report on what has happened to this plant. If the plants are still on site, a suitable location for relocation be identified with the advice of a City Ecologist and the firm used in the SLSR. The plants should only be moved when the likelihood of re-rooting is highest.

**Theme #6 – Site Plan / Development Agreements**

**Recommendation 8: The site plan and design elements include:**

- a. If Phase 2 starts more than three years after the date of the draft SLSR, the proponent be required to submit a new SLSR to determine if there have been any changes to the evaluation of the woodland.
- b. There be an EIS to determine the buffer distance from the FOD/Shallow Water ecosite which was identified as Significant Wildlife Habitat.
- c. In the Phase 2 development, a formal bat habitat assessment be required including bat exit surveys, and any cavity trees be preserved in the woodland. (page 25 and 27, SLSR)
- d. A tree retention report be required.
- e. The proponent be required to monitor the relocated SWH for three years and report in the spring and fall to a City Ecologist as to the restoration of the terrestrial crayfish and Western Chorus Frog populations.
- f. If the wetland is relocated on this site, phase 2 might have a negative impact on the new feature, including impacts caused by changes to or piping of the tributaries on site. A water balance study must be part of the monitoring program.
- g. Any new interference with watercourses or wetlands will result in the forfeiture of any securities and charges under Section 28 of the Conservation Authorities Act.

**Theme #7 - Dewatering Activity**

With respect to the recommendation regarding sediment control for dewatering systems, we would reinforce that need given the proximity of nearby surface water channels that are connected ponds and wetlands located east of the site and are tributaries to Dingman Creek. We reference the City of London guidelines for Sediment and Erosion, which specifies that controls must be put in place to ensure adequate protection of water quality in open watercourses within the City's boundaries.