

## THAMES VILLAGE

Documents reviewed:

- 2015 Thames Village (Old Victoria East Subdivision 1691, 1732, 1742 Hamilton Road) EIS prepared by Natural Resource Solution (EIS 7-2015);
- 2015 exp's Hydrogeological Assessment and Water Balance;
- 2017 Golders' Hydrogeological Assessment;
- 2013 exp's Slope Stability Investigation;
- 2017 exp's Consolidated Slope Assessment; and
- 2015 AECOM's Old Victoria SWM Facility No., Functional Design Volume II-Supplemental Reports.
- consultant's document dated April 12, 2017 reply to City and UTRCA

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August 24, 2017 EEPAC meeting**

## INTRODUCTION

**This EIS should not be accepted until a “holistic” document is prepared for review by the City and agencies. In its current form, with multiple documents, is confusing and liable to misinterpretation and understanding. EEPAC is concerned that it will be difficult for staff to provide clear conditions of development which is important as this development is being shoehorned adjacent to an ESA.**

**Ideally, the City should buy lands in this area to avoid having a development on each side of the ESA “finger” (Tributary 2c)**

EEPAC is disappointed that it has not been involved in the review of this proposal since its review of the 2013 draft of the EIS addendum. It only received at its May meeting, a copy of the April 12, 2017 letter from the consultant which was a collection of responses from the consultant to the City and the UTRCA. EEPAC was not invited to the April 14, 2015 meeting referred to in the July 2015 version of the addendum (EIS 7-2015). In fact EEPAC only received EIS 7-2015 (which contained the consultant's comments to EEPAC's 2013 comments, when it asked for a single comprehensive version in June, 2017.

Further, EEPAC has grave concerns about this development proposal as will be detailed below. In general, it is being shoehorned into an ESA with many hopeful comments in the EIS that all will be right with the ESA after construction. However, the EIS is weak on considering and mitigating post construction impacts. It generally relies on standard conditions to provide the protection for the ESA post construction. This report includes recommendations for additional conditions of development and holding provisions meant to provide for a more detailed review of those post EIS Plans mentioned in the EIS 7-2015.

The Impact Analysis in EIS 7-2015 ignores the continued access to the Hydro corridor and the impact of grading which will not match existing grades. It appears permission has been given to encroachments (p. 93) that were permitted so that the constraints fit the development. The development should be sized to

fit the constraints instead. It is also quite amazing that the impact analysis claims no significant impact from increased human entry into an ESA that has no managed trail system or Conservation Master Plan. There is also no mention of cats and dogs in the impact analysis either.

If, despite the deficiencies, the City recommends changes to the land uses, EEPAC has the following recommendation.

**RECOMMENDATION #1:** A specific holding provision(s) be applied to this subdivision and no Draft Conditions for this subdivision be issued by the City until all required clarifications and details listed below be provided by the owner and its consultants for EEPAC acceptance, all to the satisfaction of the City, MOECC and the supported by UTRCA:

- the hydrogeological assessment including water balance;
- the slope stability investigation and its buffers, dewatering detailed methodology and measures;
- specific water quality/quantity and erosion control monitoring program under the pre (existing baseline conditions) and post construction conditions (including, but not be limited to, water quality basic chemistry and biological monitoring-BioMap);and
- a cumulative impact evaluations of major features and functions of environmental/ecological system that may be impacted by the proposed land development and services.

### **Theme 1 - GROUND WATER AND INFILTRATION**

The EIS references that discharge to the Thames from the Tributaries is cold water. We have concern is geochemistry/ temperature changes from dewatering/ surface water drainage (and flow into Thames) could have deleterious impact on habitat.

It appears that there is groundwater discharge along the entire length of the tributaries (Tributary 1, 2, 2a, 2b, 2c, and 6) with the presence of Skunk Cabbage, Marsh Marigold, and Watercress indicating the presence of groundwater discharge - groundwater discharge is not just confined to the visible seeps. This likelihood is further supported by the groundwater flow map prepared by Golders, which indicates the groundwater table of the unconfined aquifer is higher than ground surface and is therefore likely discharging to the tributaries. The report should address the potential impact to groundwater discharges along the entire length of the Tributaries.

**RECOMMENDATION #2:** This matter requires further commentary/ analysis prior to acceptance of the report. Impacts to the tributaries must be quantified.

Post development infiltration needs to be given a second look, with a more holistic approach that looks at the development as a whole (including the impact of the SWM facility) rather than piecemeal. EEPAC has two concerns:

The report we reviewed was in isolation to the other areas being developed. Groundwater flow to the tributaries will come from both the upland

portions and the site covered by the Golders report, and post development infiltration for the entire site needs to be considered.

The addendum to the exp report from June, 2015 that discussed post development infiltration is insufficient and inconclusive:

- A), infiltration in the developed areas, even after mitigation measures, is expected to range between 40 and 65%, well below the 90% target cited in the Golders report.
- B) The assumptions regarding post development infiltration in Parcel 6, which is essentially the ESA, is likely wrong. The report assumes that run-off from adjacent parcels is treated as precipitation in Parcel 6; it is not, in my opinion (precipitation is evenly distributed over the entire site, whereas run off is a point source and will likely not infiltrate into the water table. As well, infiltration upstream in the areas being developed is much more important given groundwater flow into the upper reaches of the tributaries. Regardless, relying on infiltration outside of the development site to achieve one's "80%" target is not consistent with the Guidelines. The target should be applicable to the areas being developed only, not the developed areas plus adjacent areas.

**RECOMMENDATION #3:** The report not be accepted until this matter is clarified and the 80% infiltration target is demonstrated to be accurate.

**RECOMMENDATION #4:**

- A. Clarification and specific required details be integrated in the final Hydrogeological Assessment report, that demonstrate the proposed required hydrogeological systems performance and the system components correlation with: seepage, aquifers connections, wetlands, surface water infiltration areas and discharges, major water resources functions and features.
- B. Also, all of the above-noted information be integrated in the water balance evaluations for the pre and post-construction conditions for the subject lands. In this report the proposed hydrogeological systems' performance under post-construction conditions be designed to mimic the pre-construction conditions or at a minimum to meet a post construction water balance target of 80% of the pre-construction water balance conditions and infiltration measures be maximized to maintain the environmental/ecological health of this system.
- C. The site specific mitigations measures, dewatering methodology and procedure be included in the Hydrogeological Assessment report in coordination with the infrastructure and grading final design for this subdivision.

**THEME 2 - SITE MONITORING DURING CONSTRUCTION ACTIVITIES**

The report references the likely need for a Permit to Take Water during construction activities, as the likely dewatering volumes are in excess of 400,000 litres per day. Additionally, 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. EEPAC has concern that dewatering during construction, as well as construction in general, could have an adverse impact on the adjacent ESA related to potential erosion and/ or increase in sediment entering the water course.

**RECOMMENDATION #5:**

- A. The dewatering plan should include an Erosion Sediment Control Plan, as well as appropriate measures to ensure the nearby watercourses located in the ESA are not impacted by the dewatering activities. The effectiveness of these measures should be evaluated consistent with groundwater monitoring program discussed in Section 8.
- B. Post-construction/dewatering, groundwater quality sampling should be conducted again to ensure no change to the baseline conditions. The wells being sampled post construction should be downstream of the construction site.
- C. For certainty, the parameters being analyzed should include BTEX as discussed in Section 4.2.

**RECOMMENDATION #6:**

- A. Clarifications and specific details be provided in the Consolidated Slope Assessment Report, the Hydrological Assessment Report and the final design of grading and storm/drainage SWM proposed servicing. This information needs to reaffirm that all surface water from the subject lands will be directed from the slope stability areas (as identified in the exp Slope Stability Investigation report).
- B. The final Slope Assessment report be required to confirm that the proposed slope stability buffers are based on all applicable engineering, environmental/ecological requirements and be required to identify the applicable dewatering detailed methodology/measures, the monitoring requirements to protect slope stability during construction activities.

**THEME 3 - POST DEVELOPMENT GROUNDWATER INFILTRATION/ SURFACE WATER RUN-OFF**

EEPAC would like to have a more detailed assessment of the pre and post development water balance. The report noted that it is important that the post-development water infiltration be sufficient to maintain the groundwater seeps into watercourses. These seeps are cited as being important to maintain.

In particular, EEPAC is concerned with the following:

The minimum post-development infiltration required to maintain the seeps is 90% of the pre-infiltration level (Section 6.2.4). Exp Services Inc. in their Hydrological Assessment and Water Balance Report on the Thames Village Residential Development (February, 2015) estimated the post-development infiltration will be 41.9% without mitigation measures, and from 71.0% to 89.6% with mitigation measures. While the Report discussed potential mitigation measures to increase post development infiltration, none were quantified. EEPAC recommends two additional mitigation measures:

**RECOMMENDATION #7**

- A. increase the depth of topsoil throughout the development, as a thicker layer of topsoil is able to infiltrate/store/evaporate more water
- B. take actions to reverse soil compaction before laying topsoil (or reduce soil compaction in the first place) (e.g. <http://www.sustainabletechnologies.ca/wp/home/urban-runoff-green-infrastructure/low-impact-development/soakaways-infiltration-trenches-and-chambers/catchment-scale-evaluation-of-rear-yard-soakaways-and-soil-amendments/>)

**RECOMMENDATION #8:**

A - Quantify the impact of the proposed mitigation techniques in order to demonstrate achieving a minimum 90% pre-development infiltration rate.

B - Incorporate these design elements into the site plan.

C - Post-development, monitor the site to ensure that the groundwater seeps remain and that groundwater infiltration is not less than 90% of the pre-development infiltration rate.

Reports identify the subject site as not being connected to the storm water management pond. Rather, surface water (including stormwater runoff) from the site will presumably drain to the tributaries, bypassing the SWM Facility. Section 6.2.1 states there will be an increase in surface runoff post-development owing to an increase in impermeable areas, which could result in significant difference in the flow pattern after a rain event (peak flow will occur sooner and will be higher). This increase in the peak discharge may result in an increase in erosion and an increase in suspended solids in the watercourse.

**RECOMMENDATION #9:**

A. - Incorporate design elements into the site plan such that the peak discharge into the watercourses is not more than the current peak discharge.

B. - Ensure that appropriate sediment control measures are put in place to limit sediment discharge from the site to that which existed prior to site development.

**RECOMMENDATION #10:** All infiltration measures must be to the satisfaction of the UTRCA and the City. This is particularly important as page 11 of the April 2017 document repeatedly says “where feasible” without explaining what would make measures feasible.

**RECOMMENDATION #11:** A hydrogeological monitoring program must be developed in the detail design stage (page 7 of the April 2017 document) to the satisfaction of the City and the UTRCA. This requirement must be a condition of development. Holdbacks must also be required because if the monitoring determines that there has been harm to the wetlands, there must be a consequence.

**RECOMMENDATION #12:** if the wetland feature and/or function is harmed, the proponent must either contribute to the creation of a wetland in another part of subwatershed or contribute to the City's Woodland Acquisition Fund or to the completion and/or implementation of the Meadowlily ESA Conservation Master Plan. This should be a condition of development.

#### **THEME 4 - WATER QUALITY**

EIS 7-2015 on page 108 suggests that a water quality monitoring program should be implemented and should be completed in conjunction with the requirements for the SWM facility. It is unclear to EEPAC if any of this coordination has taken place. The detail design work is done for the SWM facility and construction is imminent. It is probably too late to coordinate programs unless such work has already taken place.

**RECOMMENDATION #13:** A water quality monitoring program for the development must be prepared and approved by the City and the UTRCA as a condition of development.

#### OVERLAP BETWEEN SWM POND WORK AND DEVELOPMENT WORK

EIS 7-2015 and EEPAC's 2013 comments all refer to the work undertaken by a separate consultant for the City for the soon (August 2017) to be built SWM pond and outlet. EEPAC has not received the details design nor the restoration plan for the site. How the City's restoration plan and the proponent's plans will work in concert remains a mystery.

**RECOMMENDATION #14:** There be coordination between the SWM Unit, Development Services and Environment and Parks Planning on restoration and protection measures for the ESA, including monitoring.

#### CLINE LANDS

(See page 108 of EIS 7-2015). EEPAC is concerned about water quality impacts of the future development. It is stated that an oil grit separator (OGS) requiring periodic maintenance will be required. Given the lands will be in private ownership after development, how realistic is this? What mechanism does the City have to compel such works? If it does, where does such information go? Are there any examples in London where an OGS have been installed, inspected and reported? With new LID requirements coming into place in Ontario, there will be a greater need for a process to be in place if not already. Regardless, the EIS relies heavily on the detail design stage of development to provide details of such a system

**RECOMMENDATION #15:** Development Services implement a program for receiving and confirming the regular maintenance of OGS where installed on private property.

**RECOMMENDATION #16:** UTRCA and City approval be required of the lot level controls.

**RECOMMENDATION #17:** Consideration be given to the road to the condo having curb and gutter with OGS rather than a gravel shoulder.

The pre-construction water quality/quantity monitoring program components are critical and important components for this monitoring program and will require to record the existing baseline conditions under dry and wet season conditions.

**RECOMMENDATION #18:**

- A. The water quality/quantity and erosion control monitoring program for the pre (existing baseline conditions) and post construction conditions (including, but not limited to, water quality basic chemistry and biological monitoring-BioMap) be developed and undertaken by the Owner and its consultant.
- B. The Draft Plan Conditions for this subdivision be required to incorporate all requirements for this water quality/quantity and erosion control monitoring program.

**THEME 5 - BUFFERS AND ENCROACHMENT**

It is unfortunate that the consultants used 10 year old city buffer Guidelines when Beacon's more recent Buffer Guideline work for the Credit Valley Conservation Authority has been used by a number of consultants. Regardless, EEPAC notes that EIS 7-2015 page 85 says that the City has agreed to buffers and the ESA boundary. Page 87 indicates the success of buffering is "provided the buffer is actively restored with native species."

EEPAC also notes that City staff confirmed that the proposed townhouse road can occur in the ESA buffer. This meeting was April 18, 2016. EEPAC was not in attendance and would not have supported such an agreement.

EIS 7-2015 repeatedly states for each small encroachment that it is not anticipated to cause a negative impact to the adjacent features. What the consultants ignore is the cumulative impact post construction. The entire document is weak in dealing with post construction impacts leaving much to future "Plans" yet to be developed. It is post development impacts generally that have negative impacts on flora and fauna.

EEPAC also takes issue with Table 1 on page 13 of the April 2017 document. It would have been much better to enlarge Area L and revegetate it. Area K is adjacent to the SWM facility. Not much of a useful buffer really, given it will probably be an access point for a path and or the outlet.

**RECOMMENDATION #19:** The success of the buffers depends not only on successful restoration, but also active post construction monitoring and enforcement. Sadly, the lack of a completed CMP for the ESA makes this post construction future questionable. City staff should move immediately to restart the CMP process or at least explain to Council the lack of action since they took office.

**RECOMMENDATION #20:** Given that Sifton Properties is developing adjacent to the west side of Patch 09028, and that the Thames Village consultants did not have access to this site, the buffers for the east side of the patch must be reviewed with the City prior to acceptance of EIS 7-2015.

**RECOMMENDATION #21:** A holding provision be applied to the site until a cumulative impact analysis is provided to the satisfaction of the City.

EEPAC is also concerned that the consultant recommends on page 12 of the April 2017 document that the proposed extension of the ESA boundary provides an opportunity for passive regeneration of this existing rear lot area into a more natural feature over time. It is unclear from any of the documentation what happens if this opportunity fails? There is a risk that the area will be overrun with invasive species. Hence, EEPAC asks for the following as a condition of the monitoring program:

**RECOMMENDATION #22:** If the passive regeneration opportunity does not show results during the monitoring period of three years, the proponent be required to re-naturalize it with species approved by a City ecologist.

#### **THEME 6 - TRIBUTARY 2**

EEPAC is concerned about the possible negative impact to the fish in this Tributary. Page 101 points out that the proposed culvert, if installed wrong, could create a new barrier to fish.

**RECOMMENDATION #23:** All in water work, must (not should as stated in EIS 7-2015) must comply with DFO and MNRF requirements.

**RECOMMENDATION #24:** A qualified person (aquatic biology preferred) should be on site during the construction and have authority to stop work if the work on the culvert would create a barrier to fish movement.

All pre and post construction stage mitigation measures made in the EIS must be included in conditions of development. EEPAC has the following to add to these conditions.

#### **THEME 7 - PRE-CONSTRUCTION CONDITIONS**

**RECOMMENDATION #25:** A cavity tree assessment for bats and bat maternal colonies be a condition of approval (as suggested on page 94 of the January 2015 version of the EIS)

#### **THEME 8 – CONSTRUCTION CONDITIONS**

**RECOMMENDATION #26:** Any lay down, storage or fuelling must be 30 m outside setbacks and never adjacent to natural features, especially, watercourses. EEPAC is most concerned that this will be difficult to achieve for the Cline lands development.



**RECOMMENDATION #27:** A Sediment Erosion Plan (mentioned at page 104 of EIS 7-2015) must be required as a condition of development. It must include direction that the storage of soils must be a minimum 30 m from all watercourses, slopes, and ravines.

On page 105, the consultants mention there should be an Environmental Management Plan to ensure sediment and erosion control measures are installed, maintained and functioning. As sediment control measures are a standard condition, EEPAC recommends the following additional requirements:

**RECOMMENDATION #28:** An ecologist/biologist, selected to the satisfaction of the City, with authority to stop work, be on site during construction.

**RECOMMENDATION #29:** A Flood Response Plan (mentioned at page 105 of EIS 7-2015) must be required as a condition of development. In that plan, it must mention that work must (not just should) not take place during high volume rain events or snow melts/thaws (see p.105-6 of EIS 7-2015).

**RECOMMENDATION #30:** Clean Equipment Protocol must be followed and be a condition of the development agreement.

#### **THEME 9 - TRAIL PLANNING**

Trails appear to be outside the scope of the addendum (p. 109 EIS 7-2015) given it is the development that gives urgency to having a trail system in place to handle the increase in human traffic. While EEPAC agrees that the standard condition, fences with no gates is a must, EEPAC also recommends:

**RECOMMENDATION #31:** The homeowner material include an explanation of why no gates should be ever installed in the fence.

#### **THEME 10 - MANAGEMENT PLAN AND MONITORING**

There is no information about species to be planted other than noting “native species” there is nothing about dealing with invasive species including Japanese Knotweed which was noted in an FOD7-4 community as well as Phragmites in Tributary 2C. It is unclear from all of the various documents in EEPAC’s hands what the actual plan is other than to allow buffer areas to naturally regenerate. There is no list of plant species proposed for which area (given the mix of ecosites, one “size” will not be appropriate to all areas). NRSI’s letter to the UTRCA and the City dated April 12, 2017 received by EEPAC at its May meeting, suggests that this natural regeneration will be monitored and if not satisfactory (to who?), “a plan could possibly be implemented.” This is hedging of the first order and is not acceptable. In the many documents there is no detail provided. Given the location adjacent to a large section of an ESA, a formal plan must be in place prior to construction.

**RECOMMENDATION #32:** A condition of rezoning (a holding provision) be applied until a formal management plan, including invasive species management, species to be planted listed, monitoring periods and hold backs for remediation

and subsequent plantings if natural regeneration fails, is approved by the City. If such a condition is not possible on zoning, it **must** be a condition of development approval.

There is woodland amphibian breeding habitat within the FOD5 community (page 5, April 12, 2017 letter). It is suggested that the 10 m buffer is sufficient protection. According to the MNR's Significant Wildlife Habitat Mitigation Support Tool development on adjacent land can have significant impacts on breeding pond functions if it alters ground or surface water quality or quantity. Woodland ponds which dry up before larvae transform as a result of disruptions to hydrological function become unsuitable sites for reproduction. Adjacent development can have a very high impact if it separates breeding habitat from summer or winter habitat. Residential and commercial development may result in the release of contaminants (i.e., sediments, high nutrient concentrations)

**RECOMMENDATION #33:** The monitoring plan must include baseline information, monitoring and reporting of the health of the SWH. The plan must also include compensatory mitigation if SWH is lost.

The letter of April 12, 2017 on page 6 also notes that "... the location and orientation of the seeps on site (also Significant Wildlife Habitat) may be altered, this is not expected to negatively affect their function to support wildlife and provide a course of vegetation biodiversity with the ESA." While it is almost certain the seeps will be altered, there is also a real possibility that they will be negatively affected.

**RECOMMENDATION #34:** The monitoring plan must include baseline information and monitoring of the seeps ecological function and vegetation biodiversity. If function or vegetation biodiversity are lost, compensatory mitigation will be required from holdbacks.

**RECOMMENDATION #35:** Any areas planted as part of the restoration plan include signage explaining why it is a restoration area to encourage people to avoid damaging it while restoration is taking place. Thorny native plants such as hawthorns should be included in the planting plan as an additional deterrent to human entry.

**RECOMMENDATION #36:** The monitoring plan should be for a minimum of 3 "cycles." In other words, if planting is in the spring of 2018, the last inspection would occur in the spring of 2021.

**RECOMMENDATION #37:** Due to the plan to cut tree roots to construct the new road to the Cline property, monitoring of tree health should be for 5 years with a holdback for tree planting or other compensatory mitigation to replace trees killed.

Although EEPAC appreciates that p. 117 EIS 7-2015 recommends that the clock start on the monitoring at 90% build out, EEPAC recommends revised wording.

**RECOMMENDATION #38:** The monitoring period begin the spring after 90% build out of the single family units or the 3<sup>rd</sup> spring after construction starts, whichever occurs first.

While EEPAC agrees with monitoring of the anthropogenic impacts (also page 117), the document is short on details of what will be done by who. For example, “warning of fines for unauthorized activities” signage is generally only installed at access points of managed trails. If there are no managed trails, the reminder of fines is an empty warning. It is unclear what mechanism exists to require the proponent to implement measures. What holdbacks will there be? What actions are taken by Development Services? This is particularly a concern because of the “phasing” of the development.

**RECOMMENDATION #39:** A holding provision be put on the Cline property subject in order to determine what impacts the single family development has had on the ESA prior to permitting the rezoning to come into force and effect. It might be necessary to make alterations to the development or site plans at that time.

## **THEME 11 - EDUCATIONAL MATERIAL FOR RESIDENTS**

Anecdotally, a former EEPAC member who received “educational material” from the homebuilder found that it was included with a great deal of other information a new homeowner received. In other words, it was easy to miss and temporal at best. Therefore, EEPAC recommends for this addition to the standard condition.

**RECOMMENDATION #40:** In addition to the standard educational brochure, the proponent be required to:

- a. Contribute to the creation of an informational kiosk about the ESA at one or more trail heads nearest (within 50 m) to the development.
- b. Pay for a city mailing of the “Living With Natural Areas” brochure and EEPAC’s “cat” brochure to all property owners 6 months after 70% of the units are occupied.