Review of:
Courtney Subdivision, Revised EIS

Located at Col. Talbot and Pack Road

Reviewer: S. Levin

HIGHLIGHTS

A. The EIS says that according to the SWM EA, the western arm tributary will be re-routed. EEPAC has reviewed the EA by Parsons and sees no such re-routing. Parsons clearly says that under the preferred option, the open sections of this tributary will be piped. EEPAC remains concerned that works on the west arm may interfere with the wetland features north of Pack Road by changing the hydrological regime. **The area north of Pack was not well studied in either the EA or the EIS due to lack of access.**

B. A clear **delineation of responsibilities** for natural heritage protection and enhancement that are related to the SWM project and the subdivision be established between the City and the subdivider. Neither the EA nor the EIS established the responsibilities.

C. A detailed **Environmental Monitoring Program (EMP) must** be developed to the satisfaction of the UTRCA and / or the City (Ecologist). **EEPAC takes the position that the City's consultant should prepare the EMP, and it should be reviewed by a City Ecologist prior to its inclusion in the subdivider's bid documents for those components related to the subdivision**.

D. The EIS does not clearly say if the proposed 3 m recreational link is paved or not. This is relevant to the width of the buffer because the City's practice (per discussion with Dianna Clarke and Linda McDougall of the City) has been to mow on either side of a paved multi-use pathway due to safety concerns related to bike/pedestrian conflict. Hence the width of the proposed buffer would be 1-2 m narrower if the pedestrian amenity is paved. **A paved and lighted pathway in the ESA is not supported by EEPAC.**

ESA BOUNDARY

Although page 1.2 indicates that the ESA boundary was delineated with the City staff on July 18, 2014, it is unclear from Figure 3 what the boundary is as the red line does not show a southern border. It is also unclear as to why all of Reach 3 of the Tributary is not included in the ESA given Figure 2 shows a wetland (MAM2-2B) that appears to go all the way to the green line in Figure 3, which is beyond the red line in this figure. The MAM2-2B is Significant Wildlife Habitat as noted in the EIS on page 5.6 due to the presence of terrestrial crayfish chimneys. As such it should be part of the ESA. As well, page 5.11 of the EIS clearly states that "… the ESA boundary should be extended along Reach 3 and 4 of the main tributary to include all portions of MAM2-2B and MAM2-2A meadow marsh communities since they are adjacent to the watercourse at the top of slope…"

RECOMMENDATION: The ESA boundary and buffer be clearly marked in the final EIS so that it may be correctly indicated on other drawings. It should include all of the MAM2-2B community.

Table 4.1 on page 4.4 clearly lays out that the Cultural Meadow at the southwest portion of the Study Area meets the Boundary Delineation Guidelines definition as an old field that would fill in a bay. It should be added to the ESA.

RECOMMENDATION: The Cultural Meadow (CUM1) west of Tributary and east of Dingman Creek be included in the ESA boundary as per the City's Boundary Delineation Guidelines and action be taken to change the mapping in the current Official Plan and London Plan to include it.

The ESA lands in the subject property appear from the EIS to be destined to be dedicated to the City. This should occur as soon as possible.

RECOMMENDATION: The lands determined to be ESA be dedicated to the City as soon as possible, and this part of the Lower Dingman Corridor ESA and all other lands owned by the City in the Lower Dingman Corridor ESA be added to the City's management contract with the UTRCA beginning no later than 2016.

BUFFERING

The EIS does not clearly establish if the proposed 3 m recreational link is paved in all sections or not (for example, page 7.8 says "3 m wide trail"). Nor do the drawings of the development clearly show "an average 10 m no touch buffer from the edge of the ESA boundary" (page 7.7). This is relevant to the width of the

buffer as the City's practice (per discussion with Dianna Clarke and Linda McDougall of City staff) is to mow on either side of a paved multi-use pathway due to safety concerns related to bike/pedestrian conflict. Hence the width of the proposed naturalized buffer (Section 7.2, page 7.3) would be 1-2 m narrower if the pedestrian amenity is paved. (The area of "no touch" would be less than claimed in the EIS).

Even if the buffer is widened to take this into account, it is questionable whether it is enough to avoid the impacts noted in the EIS at the bottom of page 7.3. A recent study (McWilliam, W., et al., The housing-forest interface: Testing structural approaches for protecting suburban natural systems following development. Urban Forestry and Urban Greening (2010), doi:10.1016/j.ufug.2009.12.002) measured the extent of post development impacts of over 350 residences built adjacent to suburban forests in Southern Ontario. The results indicate that boundary treatments can offer some long-term protection from residential encroachment; however, commonly implemented treatments can be greatly improved. Boundaries between residences and natural systems should be carefully designed to control physical access, clearly delineate private from public land uses, and where appropriate, encourage community monitoring of the housing/forest interface. However, even under the most effective boundary treatment, encroachment activities continued at significant distances from forest borders. Forested buffers of at least 50 m wide are required to segregate encroachment impacts from sensitive forested natural systems.

EEPAC is aware of only one location in Warbler Woods in study by Beacon for the City where the effectiveness of a path or trail behind properties was reviewed for limiting encroachment and the dumping of yard waste. If the City intends to install a trail/path in addition to the set back from rear lots, it should check to see if the effect is as predicted by making a point of visiting the site on a regular basis (1, 3, 5, 10 years) and comparing it to other sites in comparable locations.

RECOMMENDATION:

a. A wider buffer be considered, particularly if a paved path is constructed.
b. Fences with no gates be required.
c. The subdivider or builder provide all new homeowners in the subdivision with a guide to living adjacent to an ESA including why no gate should be installed in a fence, why pets should not run loose, which plants to avoid

planting adjacent to an ESA, information on the City's Adopt an ESA program, and contact information for Friends of Dingman Creek.

d. Within 6 months of 70% build out, the City or the subdivider send all addresses in the subdivision a copy of the City's "Living with Natural Areas" pamphlet to reinforce the homeowner guide.
e. The City review the effectiveness of using a trail/path as a means of mitigating encroachment by regularly visiting the site and reporting the results to EEPAC and / or PEC.

EEPAC is puzzled by the information provided on page 7.8 regarding the assimilation of water and the "access repelling impacts" of the buffer. It is unclear how the consultant was able to conclude that the assimilative capacity of the buffer will be adequate. There are no data presented to support this assertion. Nor does the EIS demonstrate where a "no touch" buffer has been successful in repelling impacts, especially where part of the proposed "no touch" buffer will be mowed if a paved path is provided.

RECOMMENDATION: The EIS be considered incomplete until supporting documentation is provided regarding water absorption requirements for the aquatic and hydrologic systems, and for the ability of a no touch buffer to successfully mitigate encroachment.

RECOMMENDATION: The subdivider be required to provide a landscape plan for the buffer to the satisfaction of a City Ecologist. The plan must include expected outcomes and an appropriate monitoring period.

SMALL TRIBUTARY / WEST ARM

As noted on page 4.11, this reach functions as seasonally direct fish habitat. Upstream, north of Pack Road, it consists of a moist, sedge meadow marsh (MAM 2-5). However, the tributary's head waters are further north and it passes through a Significant Woodland (Patch 10036). From air photos, it appears that another, larger wetland is located in this patch. The watercourse was not investigated north of Pack Road as the land owner restricted access. There is some question as to the impacts of the downstream works on this wetland. According to the EA by Parsons done for the City for the SWM facility for this development (page 74), the preferred alternative "… scored less in the

"Environmental" category as it involved piping and burying the intermittent tributary, which will result in the loss of potential habitat and removal of areas of floodplain." Figure 6-4 of the EA which shows Alternative 3 does not indicate that the watercourse will be re-routed along Pack Road as stated in the EIS (page 7.5 section 7.1.2.2). This contradiction is concerning and requires clarification.

EEPAC is concerned with the impacts on the ecological functioning of this small tributary as direct fish habitat and with its hydrologic functions in supporting the meadow marsh north of Pack. Generally, piping lowers the water table, drying out features. Neither the EIS nor the EA provide any data on anticipated post development changes to the hydrological regime north of Pack.

RECOMMENDATION: After the functional design for the SWM facility determines the work proposed for the west arm, there must be a hydrologic study to determine the impacts on the features and functions of the tributary including impact on direct fish habitat and the meadow marsh north of Pack. If damage to the features or their functions is predicted, compensatory mitigation must be provided.

RESTORATION OF PROPOSED CHANNEL BLOCK

Page 7.13 identifies that "restoration opportunities are available within the proposed Channel block as part of the channel improvements. The final design of the channel block should include a detailed planting plan." EEPAC agrees, however, it is unclear as to whether the City or the proponent will be responsible for this work, and how long it will be monitored.

RECOMMENDATION: Once the responsibility for channel improvements is identified, the detailed planting program as well as the functional design for the improvements be to the satisfaction of the UTRCA and / or a City Ecologist.

TRAIL/PATHWAY

The EIS is unclear as to the type of feature that will be built. It uses the term pathway and trail. Other than indicating a 3 m width, there is no clear statement if it will be a paved pathway or a natural trail. This is of some concern to EEPAC for a number of reasons. It is unknown when the amenity will be built. If late in the development, people will have already created their own unmanaged ways into the ESA. Habits are hard to break.

Section 5.5.1.1 of the EIS briefly discusses turtle overwintering areas. No overwintering surveys were conducted (page 5.5) yet the EIS concludes there is no risk as development is outside the ESA. In section 5.5.2.1 the EIS briefly reviews turtle nesting areas. It notes on page 5.5 that "potential candidate SWH for turtle nesting occurs within the ESA within 100 m (of) MAM communities." However, later in this section, the consultants indicate that no turtle nesting surveys were conducted. The reason - because no impacts are expected to this habitat as a result of the proposed development since "all proposed development is outside of the ESA where potential turtle nesting habitat may be present." This assertion seems odd given the MAM communities are less than 100 m from the proposed development. As well, the proposed pathway/trail could have negative impacts on nesting and overwintering as it will be located closer to the MAM communities including the proposed bridge which EEPAC does not support. According to Parsons (page 28), a snapping turtle was reported in the Mathers Stream (Tributary in the EIS) Valley.

RECOMMENDATION: Turtle overwintering and nesting surveys be conducted prior to any site alteration within 100 m of candidate SWM for turtle nesting. This includes site alteration for a trail/pathway.

RECOMMENDATION: E&PP convene a Trail Advisory Group (TAG) meeting to provide advice on location and surface type for this amenity as guided by the Trail Guidelines. The TAG should include a representative from Friends of Dingman.

RECOMMENDATION: The amenity be created at the beginning of the development process in a location and surface type as determined by the TAG.

RECOMMENDATION: No bridge be constructed over the tributary within the boundaries of the ESA, particularly prior to the identification of the Management Zones as per the Trail Guidelines.

RECOMMENDATION: When the amenity is provided, concurrently address the invasive species such as buckthorn.

RECOMMENDATION: No lighting should be installed as suggested on page 7.6 of the EIS. As noted on page 7.7, there will already be an increase in lighting from the development.

SPECIES OF SPECIAL CONCERN

In addition to the prior recommendation to do turtle nesting and overwintering surveys, EEPAC has the following recommendation for the construction period.

RECOMMENDATION: During construction of the subdivision, the subdivider's construction crews be made aware of turtle identification and that a City or UTRCA Ecologist/Biologist be notified if turtles are observed during construction, particularly during nesting season. Fencing should be constructed and maintained between the ESA buffer and all construction.

Breeding Birds (p. 4.7)

It surprising that the consultants did not check culverts for swallow nests. They observed both bank and barn swallows during surveys. The literature notes that Barn Swallows nest in culverts and their nests have been found in a number of culverts by consultants preparing EISs for other clients (Richardson Farms and the City's new Recreation Centre on Southdale near Colonel Talbot).

RECOMMENDATION: The EIS be considered incomplete until surveys of culverts are conducted to determine if swallows are nesting. If they are found, nesting kiosks be provided.

EEPAC is also surprised to see page 7.7 claim that no reduction in the number and range of species that could utilize this large habitat block are anticipated. This is without a source for this assertion. It is easy to make this assertion as no follow up data collection is anticipated. It is also a "leap" to suggest that while there may be an increase in mortality of some breeding birds due to increase predation, the EIS claims that the woodland along the Valley "will provide a variety of habitat niches for such species to find suitable habitat and adapt to increased predation. This claim comes without any supporting data, nor information on which bird species the consultant expect to start using the woodland after an increase in predation. After all, the woodland is already there, the people and their domestic animals are not.

RECOMMENDATION: The EIS either include supporting documentation on this claim (EEPAC would be most interested in it) or delete this section from the EIS.

FISH HABITAT

On page 5.7, the EIS notes that Reaches 3 and 4 of the Tributary provide direct warm water fish habitat. It also notes that DFO requires that it be demonstrated that the proposed development will result in "non Net Loss of the productive capacity of fish habitat" by avoiding the direct loss of habitat or habitat

components. The EIS then points to Section 8, the EMP, where one would expect to find how it would demonstrate the development will meet this requirement. However, Section 8 does not explore this issue.

RECOMMENDATION: The EIS be considered incomplete until it demonstrates that the proposed development will result in no Net Loss of the productive capacity of fish habitat or how the stream enhancements will improve it.

INVASIVE SPECIES

Page 4.4 notes that the FOD 7-2 where the Butternuts are located has a sub-canopy with common buckthorn dominant in the understory. This should be addressed during the construction of the SWM facility.

Table 4.1 on page 4.5 also notes the existence of reed canary grass in the area where the Tributary will be enhanced.

RECOMMENDATION: If this is non-native reed canary grass, it should be removed as part of the contract to rehabilitate and enhanced the Tributary. This must be made a condition of the development agreement.

RECOMMENDATION: The SWM unit be asked to include the removal of buckthorn from the understory of this community in its project budget for the SWM facility for this development.

ELCs

Page 4.4 notes a Dry – Fresh Poplar Forest (FOD 3-1). However, it does not appear in Figure 2.

RECOMMENDATION: The consultant either revise Figure 2 to include this community or revise Table 4.1 to exclude it.

NET ENVIRONMENTAL EFFECTS ASSESSMENT (TABLE 7-2)

- Table 7.2 – page 7.10 – constructing a stormwater management pond is not a mitigation measure.

There is a recommendation to monitor channel stability and vegetation after the channel improvements. However, there is nothing as to who is to do the monitoring or for how long.

RECOMMENDATION: Whoever is responsible for the construction of these improvements, should be responsible for monitoring. Monitoring should take place for at least three springs. One year as suggested on page 7.11 is inadequate.

RECOMMENDATION: Whoever is responsible for the construction of each of the various parts of this development (City for SWM, proponent for other elements) should be responsible for the removal of invasive species as suggested on page 7.12.

CONSTRUCTION AND GRADING IMPACTS

In addition to the recommendations on page 7.4, EEPAC adds the following:

RECOMMENDATION: All storage and refueling/maintenance of equipment much be at least 30 m from the edge of the buffer to the ESA and the Tributary.

It is also not clear who is responsible for the channel improvements noted on page 7.5.

RECOMMENDATION: The UTRCA approve all work on the channel improvements proposed for the upstream intermittent reaches of the Tributary.

RECOMMENDATION: E & S controls must (rather than should as indicated in the EIS on page 7.6) be implemented prior to the initiation of any construction or grading on the subject property. They must be maintained in good repair.

RECOMMENDATION: Vegetated buffer strips should be of vegetation that is consistent with the surrounding area and not include invasive or non-native species - use the City's for Guide to Plant Selection for Natural Heritage Areas and Buffers. EEPAC urges to avoid any hydro seeding as the nitrate "burst" can have negative impacts on aquatic and groundwater systems.

ENVIRONMENTAL MANAGEMENT PLAN

Compliance Monitoring and Qualitative Vegetation Monitoring (page 8.3)

Although EEPAC supports the preparation and submission of compliance monitoring reports quarterly while the site is actively being developed, we believe that more clarity is required.

RECOMMENDATION: The quarterly compliance monitoring reports be sent to Development Services and Environment and Parks Planning. To say that they should be sent "to the City" is insufficient direction.

RECOMMENDATION: Any impacts on the natural environment from accidents such as run off or sedimentation must be reported immediately to Development Services and E&PP.

RECOMMENDATION: Compliance monitoring should continue after assumption or until work adjacent to the ESA is completed, whichever is later. EEPAC is unclear what the consultant means by "while the site is actively being developed/constructed…"

The monitoring period recommended on page 8.3 is inadequate. It is unclear what "implementation of the rehabilitation plans" means. Does the monitoring period clock start when the rehabilitation starts or when the work is completed and accepted by the City and the UTRCA? It is also unclear where the support for a two year period of annual monitoring comes from. EEPAC generally prefers longer periods with more regular monitoring than once per year, particularly in this case where a trail will be established. Also important is ensuring that the contract for the rehabilitation work comes with warranties that can be easily "called" if the expected outcomes are not achieved. Finally, this section of the EIS refers to including the monitoring as part of the landscape and planting contracts assigned to this development. In addition to the lack of detail as to what should be included in such contracts, the EIS leaves out if this work should be done as part of the SWM project or the subdivider or both.

RECOMMENDATION: The subdivider and City agree in writing to the responsibility of each in the rehabilitation plans for the Tributary. Clear outcomes for the landscaping and planting be included in contracts for such works, with approval of the Plans be the responsibility of a City Ecologist and/or the UTRCA as appropriate.

Misc

- Figure 2 – There are five "points of interest" noted in Figure 3. However, there is no explanation of them in either the notes to the Figure, nor in the EIS. This should be included in the final EIS or deleted. If it relates to the evaluation of the impact on the natural features and functions, EEPAC would appreciate the opportunity to review the material before the EIS is accepted.
- On page 10, it notes that in December 2014 Development Services asked the consultant to update Figure 2 to show the locations of the terrestrial

crayfish chimneys. This appears not to have been done unless these are the points of interest.

- Page 3.5 – Amphibian Survey table. There is a discrepancy in the precipitation column. According to the Environment Canada web site (Daily Data Report), the precipitation data for the day of and day before the surveys are as follows.

Day before survey	Day of survey
April 28 – 10. 8 mm	April 29 – none
May 26 – none	May 27 – 2.1 mm
June 21 – none	June 22 - 29.8 mm

- Page 4.3 – section 4.5.1 Landscape Ecology. Notes the target for natural vegetation in the Dingman Creek Watershed Report Card – then ignores the report card in the rest of the document.

- Page 4.6 – section 4.5.3 mentions the Butternut. Oddly, the second full paragraph on this page states “This medium-sized tree is commonly found in a variety of habitats throughout Southwestern Ontario.” Perhaps more accurate is to delete the word ‘commonly” as this tree species is an endangered species under the Provincial Endangered Species Act. Common and endangered generally do not go together.

- Page 5.1-5.2 – section 5.1 Significant Wetlands. While it is likely the wetlands are not Provincially Significant Wetlands, it does not appear an evaluation was done under the Ontario Wetland Evaluation System. In fact, section 5.1.1 says the wetland communities were unevaluated.

- Page 5.2 – Significant Woodlands. It is unclear which woodland has been evaluated. It is certainly not Patch 10036 which is larger than 4 ha. It is assumed Table 5.1 applies to the wooded area within the Study Area which logically is part of the ESA based on applying the Boundary Delineation Guidelines.

- EEPAC did not receive the Floodplain Analysis by Stantec referred to on page 6.2