

Tributary C EIS

Tributary C Storm/Drainage & SW Management, Transportation & Sanitary Trunk Servicing Works EIS

dated March 4, 2013

Reviewers: G. Sass, S. Levin, I. MacKenzie
May, 2013

THEME #1 – Provincially Significant Wetland (page 19)

Recommendation 1: The PSW identified in this EIS be designated Open Space on Schedule A and PSW on Schedule B-1 of the City's Official Plan. This is consistent with the EIS recommendation on page 46.

Recommendation 2: The mapping and evaluation of the wetland be submitted to the MNR for its files and to update PSW mapping as per the recommendation in the EIS on page 46.

Recommendation 3: Any development within 120 m of the PSW requires a separate EIS as per the City's Official Plan section 15.5.1.ii

Recommendation 4: Any references in the EIS to Locally Significant Wetland (e.g. pages 51, 53) be changed to Provincially Significant Wetland

THEME #2 – Future EIS requirements prior to development

Recommendation 5: Any future EIS preceding development be required to re submit an amphibian survey as the one done for this study was hampered by weather (page 26). This will define a Critical Function Zone for amphibian habitat outside the wetland, such as frog overwintering habitat or turtle nesting habitat. The CFZ should be incorporated into the "core" feature as per Beacon page 8.

Recommendation 6: A migratory bird survey in the fall be required and it should include the unevaluated patches.

Recommendation 7: The EIS include the location of bicycle lanes away from the ESA to avoid installing works along the sensitive Tributary C (page 35). It should be noted that there is a school block near by to the east. Providing a paved attractant to a unique environment must be discouraged.

Theme #3 – ESA

Recommendation 8: The ER lands be redesignated on the City's Official Plan Schedule A as Open Space, in the Z-1 zoning by law as OS5, and as ESA on Schedule B of the Official Plan as per the findings of this EIS (page 29). The

Tributary C EIS

boundaries are as generally found on Figure 9 of the EIS but consideration be given to adding them as an extension to the Kains Woods ESA

Recommendation 9: The unevaluated patches 07032 to 07035 be included in any future EIS prior to development to determine the significance of these patches.

Recommendation 10: Greater buffering be applied to the ESA by using the Ecological Buffer Assessment Calculations found in the City's Guidelines for Determining Setbacks and Ecological Buffers AND, as a test, the methodology presented in Beacon's **Ecological Buffer Guideline Review, prepared for the Credit Valley CA, Dec. 2012**, pages 93-105.

As noted on page 17, "... the area exhibited high plant species diversity, ground water inputs and is an important feature within the landscape." This is particularly true given the proposed future development including a school site and the location of the proposed lots as shown in EX 2 in the back of the report. **There is a need for buffering from adjacent land uses.** The lack of any additional buffer for the ESA (see EIS page 50) is disturbing as this recommendation of the EIS relies on the 79 m setback from the top of back of Tributary C to the SWM facility. However, this setback is subject to a Part 2 order of the EA filed by the landowner. The MNR Natural Heritage Resource Manual is specific that the minimum buffer from a coldwater stream is 30 m (table 11-3, p. 106 of the Manual).

The author appears to use Beacon for his defense of no additional buffer, however, Beacon's methodology has not been used in the EIS. The EIS suggests no buffer is required due to Beacon's work, however, on page 45 of its study, Beacon states:

Despite the growing body of available research that has been conducted on the effectiveness of wetland buffers, there continues to be confusion between CFZ and buffer functions, which confounds the determination of appropriate buffer widths. Nonetheless, the research conducted to date strongly supports the ability of vegetated buffers to provide a number of important functions in terms of protecting wetlands' water quality and habitat functions, and potentially even mitigating some water quantity stressors.

The definition of buffer is:

Buffer strips are strips of vegetated land composed in many cases of natural ecotonal and upland plant communities which separate development from environmentally sensitive areas and lessen [the] adverse impacts of human disturbance.

Norman 1998

Tributary C EIS

Theme #4 – Significant Vegetation Communities within the study area

Recommendation 11: There is a reference to a Dry-Fresh Hickory Deciduous Forest Type (page 4). It should appear on Figure 6

Theme #5 – Cold Water Fishery

One adverse event could ruin the unique attributes of this watercourse. Hence the direct and indirect habitat should be treated as one, using the level of protection for the direct habitat as the base (i.e the precautionary principle apply to buffers and the defining Critical Function Zones.

Recommendation 12: No in-water work be permitted except between July 16 to September 31.

Recommendation 13: The Conservation Authority determine if Fisheries Act authorizations are required.

Recommendation 14: The use of trees for shading and thermal buffering (first noted on page 33, then 41) is admirable, but native non invasive trees take a long time to grow. Beacon (p. 18) notes a study by DeWalle that found buffers of 12 m were sufficient as long as the buffer was sufficiently tall (above 30 m and dense). This would not be the case for many, many years adjacent to Tributary C. EEPAC supports the 79 m buffer to protect the fishery and recommends enhanced plantings of fast growing, non invasive native shade trees.

Recommendation 15: EEPAC is concerned that a `large storm event` (page 41) shortly after trees, shrubs and herbaceous plants are planted, could wash out substrate and make the plantings ineffective (as occurred in the Medway, north of the second bridge). Plantings must be done with stabilizing materials so that the chance of wash out before establishment is minimized

Recommendation 16: A qualified aquatic fishery expert be asked as to the benefits or detriments of the artificial barriers and the ponds they have created. The EIS seems to suggest that they contribute to warming (page 37). However, it is also possible they provide cold water habit due to ground water welling.

Theme #6 – Environmental Management Plan (Section 6.0 and 7.0, beginning on page 45)

It is also incumbent that the program and baseline monitoring tasks, who completes these tasks, the frequency of data collection and reporting, and responsibility for confirming all tasks are complete before tendering, is established immediately upon approval of the EA by the Minister. Most importantly, it must be clear who is notified if there is an incident (page 7.4.9). The report says “The City.” The final Plan must be more specific than that with phone numbers available at the construction site. As well,

Tributary C EIS

any requirement for corrective measures must (not should as per page 60), be communicated to all parties and undertaken ASAP.

Recommendation 17: Photos of Special Concern and Endangered Species appear in the construction trailers with instructions for workers to alert the supervising ecologist if any are found during construction

Recommendation 18: It appears part of this section is copied from previous work as the numbering is not always consistent (e.g. p. 58 refers to Section 3.1 rather than 7.4). It also appears that Stage 1 – Construction Stage Monitoring (year 1) is missing from this section of the EIS. These pieces must be corrected before the EIS is deemed to be complete. For example, p. 57 recommends a photolog including photos of the SWM facility where the outflow is clearly visible. This appears in the Stage 0 section of the report. It is unlikely that Stage 1 monitoring consists of only sections 7.4.7, 7.4.8, and 7.4.9, and 7.10.

Recommendation 19: Permanent Private System for stormwater management requires compliance and monitoring. There is very little in city practice in this area. The City should develop monitoring requirements for such systems. This work should be carried out by city staff in Stormwater Engineering and Environment and Parks Planning, with involvement of the local office of the Ministry of the Environment and the UTRCA. Consideration be given to contracting the UTRCA to do the monitoring.

Recommendation 20: The impact of dust on vegetation on the edges of natural heritage features can only be mitigated not eliminated and it is facile to say so (page 39). This line should be revised. Non chemical dust suppressants must be used (see recommendation 8.1 on page 53).

Recommendation 21: It is unclear as to why there is a recommendation (page 51) to put in riverstone in Section C of Tributary C as a means to facilitate filtration of sediments. Shouldn't that be part of the SWM facility requirements? Please add sufficient detail to explain the reason for this recommendation.

Recommendation 22: Construction mitigation (p. 52) should provide recommendations for how to deal with “flashy” rain events that may overwhelm conventional silt fencing. Silt fencing should exceed the Provincial Standard Specifications given the sensitivity of the area.

Recommendation 23: Surfaces susceptible to erosion (6.2 on p. 52) should be stabilized after construction through vegetated matting consisting of non invasive native species particular to this ecosite, and not simply reseeded or sodded.

Recommendation 24: Clean equipment protocol for construction equipment must be implemented at this site.

<http://www.ontarioinvasiveplants.ca/index.php/municipalities>

Recommendation 25: More than periodic supervision is required for this project (9.2 on p. 53 and 7.10.2.1 on page 61). There must be daily inspection by a qualified ecologist retained by the city who reports to a Director at the City. This should include the inspection of erosion and sediment control measures. This

Tributary C EIS

Environmental Inspector must have the ability to stop all work if required to protect the Natural Heritage System. It should also be clarified what are the areas of intersection between the Environmental Inspector and the construction inspector (p. 61).

Recommendation 26: Construction documents should not be released for tender until all components of the EMP are established and the baseline monitoring data collected and analyzed. (section 7.4 page 56). It must be approved by all parties listed on p. 55 (MOE, MNR, City of London, UTRCA).

Recommendation 27: We are unclear if data loggers downloaded every two months and water levels recorded makes for sufficient data points. (page 56). It is also unclear as to how many data points will be required.

Recommendation 28: It is unclear who will collect and report the water quality indicators. (p.56). This must be decided before construction documents are released for tender.

Recommendation 29: Given the sensitivity of Brook Trout to suspended sediment load, turbidity measurements should be included as part of the proposed water quality monitoring plan (Section 7.4.2. pg 56). Turbidity should be measured at multiple downstream sites, before, during, and after construction, and in addition to the proposed biannual sediment trap measurements.

Recommendation 30: It is unclear how spawning survey data will be collected, particularly at the outflow of the Tributary, as the EIS reports that landowner approval was not given for access to this reach of the Tributary. An explanation is needed.

Recommendation 31: Annual monitoring (p. 58) during Construction Stage monitoring – Year 1 is insufficient. More frequent monitoring and reporting should be required during this Stage. It was weekly for the construction of the Medway Sewer.

Recommendation 32: Corrective measures should be decided upon more frequently than annual monitoring reports. Hence our recommendation for more frequent monitoring.

Recommendation 33: There is no reference to compensation if implementation and operation of SWM and other infrastructure result in net loss. At a minimum, this must be included in the EIS, including where and at whose cost.

Theme # 7 – Infrastructure

Recommendation 34: EEPAC does not support infrastructure in components of the Natural Heritage System. The crossing of the tributary (figure 9 and 10) for sewer servicing should use directional drilling or place the sewer pipe under the road crossing to minimize the amount of construction.

Recommendation 35: EEPAC asks to review the Compensation and Restoration Plan developed during detailed design for the collector road alignment. (page 43)

Tributary C EIS

Theme #7 – Storm Water Management

Recommendation 36: The disturbance to baseflow recharge is of concern. The EIS indicates (page 38) that the Interim Phase 1 Facility will be sized for flows up to the 2 year storm and that this facility will treat construction flows prior to discharge to the ultimate SWMF A. However, flows greater than the 2 year event would be managed on the surface of SWMF A. It appears that any 2 year flows prior to the construction of SWMF A will be untreated. This sequence must be reviewed and treatment of greater than 2 year events be required prior to construction of SWMF A.

Buffer of Wetland, from Beacon, page 35

The nature and intensity of the adjacent land uses can also play a role how well a wetland buffer can prevent encroachments into the wetland. Castelle *et al.* (1992) cite a study by Shisler *et al.* (1987) in which 100 wetland sites were assessed in terms of buffer width and direct human disturbances to wetlands (e.g., dumping of garbage and fill, vegetation damage and removal, trampling). They found that the intensity of adjacent land uses accounted for much of the variation, and recommended wetlands in lower intensity land uses (i.e., agriculture, low density residential, passive recreation) have buffers of 15 m to 30 m from wetlands, while wetlands within high density residential, commercial or industrial have buffers of at least 30 m.