

**3RD REPORT OF THE
ENVIRONMENTAL AND ECOLOGICAL PLANNING
ADVISORY COMMITTEE**

Meeting held on March 16, 2017, commencing at 5:07 PM, in Committee Rooms #1 and #2, Second Floor, London City Hall.

PRESENT: S. Levin (Chair), A. Boyer, L. Des Marteaux, S. Hall, C. Kushnir, S. Madhavji, K. Moser, A. Regehr, N. St. Amour, M. Thorn and I. Whiteside and H. Lysynski (Secretary).

ABSENT: E. Arellano, C. Evans, P. Ferguson, D. Hiscott, S. Peirce, R. Trudeau and N. Weerasuriya.

ALSO PRESENT: C. Creighton, J. MacKay, L. McDougall, L. Mottram and C. Saunders.

I. CALL TO ORDER

1. Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

II. SCHEDULED ITEMS

2. Federation of Canadian Municipalities - Diverse Voices for Change Initiative

That it BE NOTED that the Environmental and Ecological Planning Advisory Committee (EEPAC) received the Federation of Canadian Municipalities - Diverse Voices for Change Initiative survey; it being noted that the EEPAC heard a presentation from C. Saunders, City Clerk, with respect to this matter.

III. CONSENT ITEMS

3. 2nd Report of the Environmental and Ecological Planning Advisory Committee

That it BE NOTED that the 2nd Report of the Environmental and Ecological Planning Advisory Committee, from its meeting held on January 19, 2017, was received.

4. 2nd and 3rd Reports of the Advisory Committee on the Environment

That it BE NOTED that the 2nd and 3rd Reports of the Advisory Committee on the Environment, from its meetings held on January 11 and February 1, 2017, were received.

5. 2nd Report of the Trees and Forests Advisory Committee

That it BE NOTED that the 2nd Report of the Trees and Forests Advisory Committee, from its meeting held on January 25, 2017, was received.

6. Municipal Council Resolution - Medway Valley Heritage Forest Environmentally Significant Area (south) Conservation Master Plan Phases I and II

That it BE NOTED that the Municipal Council resolution from its session held on February 14 and 15, 2017, with respect to the Medway Valley Heritage Forest Environmentally Significant Area (south) Conservation Master Plan Phases I and II, was received.

7. Municipal Council Resolution - 2nd Report of the Environmental and Ecological Planning Advisory Committee

That it BE NOTED that the Municipal Council resolution from its session held on February 14 and 15, 2017, with respect to the 2nd Report of the Environmental and Ecological Planning Advisory Committee, was received.

8. Municipal Council Resolution - Westminster Ponds / Pond Mills Environmentally Significant Area

That it BE NOTED that the Municipal Council resolution from its session held on February 14 and 15, 2017, with respect to the ecological restoration works to be completed in Westminster Ponds/Pond Mills Environmentally Significant Area, was received.

9. London Seedy Saturday

That it BE NOTED that the communication dated December 7, 2016, from S. Levin, with respect to London Seedy Saturday that was held on March 4, 2017, was received.

10. ESA Management Committee Minutes

That it BE NOTED that the ESA Management Committee Minutes, from its meeting held on February 15, 2017, were received.

IV. SUB-COMMITTEES & WORKING GROUPS

11. Eagle Ridge Phase 2 Environmental Impact Statement

That the attached, revised, Working Group comments dated March, 2017, related to the Eagle Ridge Phase 2 Environmental Impact Statement, BE FORWARDED to the Civic Administration for consideration.

12. Draft Colonel Talbot Property Subject Lands Status Report

That the attached, revised, Working Group comments dated February 10, 2017, related to the draft Colonel Talbot property Subject Lands Status Report, BE FORWARDED to the Civic Administration for consideration.

V. ITEMS FOR DISCUSSION

13. Local Advisory Committee for Medway Valley Heritage Forest ESA (south) Conservation Master Plan - Phase 2

That K. Moser and S. Hall BE APPOINTED as the Representative and the Alternate, respectively, to the Local Advisory Committee for the Medway Valley Heritage Forest ESA (south) Conservation Master Plan - Phase 2.

14. Properties located at 810 Westdel Bourne, portion of 1055 Westdel Bourne, 1079 Westdel Bourne, 1959 and 1997 Oxford Street West

That it BE NOTED that a Notice dated February 6, 2017, from L. Mottram, Senior Planner, with respect to the application by Craig Linton, Developro Land Services Inc., on behalf of West Kains Land Corp and Liahn Farms Ltd., relating to the properties located at 810 Westdel Bourne, a portion of 1055 Westdel Bourne, 1079 Westdel Bourne, and 1959 and 1997 Oxford Street West, was received; it being noted that the Environmental and Ecological Planning Advisory Committee Working Group comments were received with respect to this matter.

15. Workplan

That the following actions be taken with respect to the 2017 Environmental and Ecological Planning Advisory Committee (EEPAC) Work Plan:

- a) Corporate Communications BE REQUESTED to assist the Working Group prior to the finalization of the brochure relating to keeping cats and dogs out of Environmentally Significant Areas; and,
- b) it BE NOTED that the Working Group will provide a draft of the proposed Dark Sky/Bird Deaths from High Rises Initiative for the EEPAC to review at a future meeting.

VI. DEFERRED MATTERS/ADDITIONAL BUSINESS

None.

VII. ADJOURNMENT

The meeting adjourned at 6:25 PM.

NEXT MEETING DATE: April 20, 2017

Eagle Ridge Phase 2 EIS

Dated May 19, 2016, received by EEPAC February, 2017

Reviewers: S. Levin, M. Thorn (aquatics), I. Whiteside (dewatering), with input on restoration plantings from Dr. Mhairi McFarlane, Conservation Science Manager, Ontario Region, Nature Conservancy of Canada, Daria Kosciński, Conservation Property Manager, Thames Talbot Land Trust, and Ben Porchuk, *Restorative Nature Experiences*, www.restorativenatureexperiences.com

Submitted to March 2017, EEPAC meeting

Also attached are EEPAC's comments on the Tributary C Storm/Drainage & SW Management, Transportation & Sanitary Trunk Servicing Works EIS dated March 4, 2013 (submitted May, 2013) as some of the comments are germane to the development of this subdivision

Please note, EEPAC did not have the 2009 EIS which included the aquatic assessment, so we could not give the aquatic assessment a rigorous review.

THEME # 1: Ground Water Dynamics and Ecological Function

A potential concern would be the influence of development on ground water dynamics. Brook trout are dependent on areas of ground water upwelling for thermal refuge and to spawn. Any heavy draws on the ground water supply or reduction in infiltration could negatively impact the populations. Furthermore, any water draining from storm water ponds into thermal refuge areas could negatively impact the population.

The Functional Design for the Storm Water Management (SWM) system indicates that the infiltration rate of the developed area will be maintained post development by the SWM system. However, the location of upwelling water from the SWM system is also important for the maintenance of the natural heritage features and the remnant brook trout population. The overland flow and area of infiltration will be different post development relative to pre-development (i.e. infiltration is restricted to the SWM pond post-development).

EEPAC wonders if the current location of upwelling sites and/or the hydraulic pressure of the upwelling sites will change after development? Brook trout not only require upwelling for thermal refuge in the summer, but they also require strong upwelling for successful spawning. If the location or hydraulic pressure of the upwelling sites change, the brook trout population may have poor spawning success or experience thermal stress during the summer. The post development monitoring plan recommends monitoring the snake hibernacula and meadow restoration, but not the ground water functioning.

There are two main points to consider with respect to dewatering and temperature:

Water temperature and geochemistry can be altered by dewatering. Construction is usually done in the summer months, so water pumped from the ground will generally be cooler than the ambient

temperature. As a general rule of thumb, deeper water will be less susceptible to seasonal temperature variations than water that is close to, or at the surface. Obviously the longer the water spends at the surface, the warmer it will get as well (assuming, of course, that the surface is warmer than the groundwater). For example, ambient groundwater could be ~11°C, the surface temperature could be ~25°C (or warmer in the direct sunlight), so any water abstracted would be warmed up after it got to the surface. Furthermore, dewatering could also alter the geochemistry of the groundwater (change in pH or oxygen levels).

Dewatering activities may also influence groundwater infiltration into the cold water stream (i.e. reduce the amount of groundwater entering the stream). For example, if they were dewatering adjacent to the stream, they could reduce the amount of water that naturally flows to the stream, or even end up taking water from the stream depending on the scale of dewatering. Reducing (or eliminating) groundwater inflow into the stream could increase the water temperature of the stream as the cooler groundwater probably keeps the stream cool.

Recommendation 1: Confirmation of no negative impact on the location or hydraulic pressure of the upwelling site due to construction or dewatering is required before any site work or dewatering is carried out.

Recommendation 2: EEPAC recommends the post development monitoring of the ESA area to ensure the functioning of the ground water upwelling areas is not impacted by the development.

Theme #2 – Restoration Plan and Monitoring

The consultant recommends meadow restoration as a compensation measure. However, a restoration plan including more forested area would better support the functioning of the ESA. The root systems of trees help to increase ground water recharge (development is in a recharge area), which is essential for the year round functioning of ground water upwelling areas. More trees would also help protect the edges of the marsh and swamp areas, while also providing shade to these wetland areas (tree plantings restricted to area along Tributary "C" east of the ESA).

For the tributary, the best vegetation to plant on the stream banks would depend on the width of the watercourse, but you would ideally want something that is relatively fast growing and could provide adequate shading to protect the tributary from solar radiation. A good mix of grasses, shrubs, and trees would help to provide shade, run-off control, and habitat for invertebrates. Brook trout are reliant on invertebrates that are derived from both stream and terrestrial sources for food.

Recommendation 3: Plant more trees along Tributary C when restoring the agricultural areas to help support the functioning of the ESA.

Environmental Management Plan (EMP) Recommendation 14: Meadow Restoration - The planting list

EEPAC has the following comments solicited from the restoration ecologists listed at the beginning of this report:

Species like Canada Wild Rye in the mix will certainly help as they establish quickly. It could be worth adding in swamp milkweed – it doesn't necessarily need it wet. In any lower areas, native Joe Pye Weed

could be a nice addition too. In addition, close enough to those wet habitats some Marsh Marigold and possibly some native Iris.

Ideally, the seeds would be sown directly after a final harvest of corn or soy, meaning that weed control needs should be minimal. If not currently in active agricultural production, then good site preparation, including several rounds of spraying and possibly tilling, would be prudent prior to sowing seeds. You need to really ensure that you let the current seed base come up and then spray it - hopefully twice so that you get the vast majority of existing seed bank.

If the field is not currently in agriculture then doing extensive site prep is a must to ensure success of the planted native species. Another thing to consider is using a cover crop such as white millet. Many seeds don't germinate in the first year and leave the field quite open to influx of non-native seed.

Regarding planting timing, on Pelee Island, the Nature Conservancy has always planted in the fall simply because we collect the seeds, don't have a place to store them, so we "store" them by planting them right away. This seems to work perfectly well. Our staff ran out of time to plant this past fall, so we have stored the seeds and will plant this spring, so we will see if it makes any difference. The key thing is that the seeds are stored by someone with some seed-storing expertise and facilities – some species will only germinate after they have been exposed to something resembling "winter" – i.e. need to be "cold – moist stratified". St Williams Nursery and Ecology Centre can do this, for example. In Norfolk, we have planted both in spring and fall, and I don't think we have noticed any obvious differences. I like the idea of fall planting as it most closely mimics what happens in nature – plants produce seeds, they fall out, sit for the winter, then grow. Logistical challenges of weather/ soil moisture can dictate when planting ends up happening – heavy, clay soils can take a while to dry out, so mechanised spring planting can be more challenging on these sites – but can also be impossible if we have a wet fall.

Mowing in the fall is not ideal, as it can remove flowers and slow seed production of the desirable, native plants, and may also damage habitat for overwintering insects. This method is employed at some sites, but not at those undertaken by the Nature Conservancy. Depending on the size, some judicious spot-spraying of patches of problematic species such as white sweet-clover could happen in early spring, before the native species emerge. Woody invasives might need to be dealt with too over time – buckthorn, autumn olive and European alder can sneak in quite quickly and should be treated before they get too big/ dominant.

Recommendation 4: The planting plan be adjusted based on the comments above and revisions made where appropriate and included in the conditions of development.

Recommendation 5: Consideration be given to contacting Dr. McFarlane to advise on the timing and follow up to the restoration plan

In the Environmental Management Plan, recommendation 16 relates to the monitoring of the restoration planting.

Recommendation 6: Monitoring of the restoration planting should follow the regime suggested below from the Nature Conservancy, noting that the suggested two year time frame included in the EMP is likely insufficient:

In the first summer, expect a range of non-native, common agricultural weeds, often annuals. In year two, expect to see these give way to the planted, native species. The objectives of restoration are first and foremost to establish as many native plant species as possible, and to not allow the establishment of non-native invasive species. Monitoring should focus on this. For example, look for autumn olive, buckthorn, quack grass and Canada thistle, common reed, and conduct monitoring to deal with them upon sight whenever possible. Looking for these species can be easier later on in the fall, as they remain green for longer than the native plants.

- We simply wander around and write down every species we come across; it might be useful to append some sort of abundance code, but again, a focus on what you need to know is important
- We need to know if we need to come back with a chainsaw or just loppers, and what sort of volume of glyphosate we might need, so we're not going to bother counting lamb's quarters, for example. For native species, we compare our list of observed species with our planting list.
- We are able to "get away with" a fairly low key monitoring approach like this because we do actually have a much more detailed system on one key restored site – we have 170 2 x 2 m plots set up, and have been collecting % cover for each species for 10 years now. We collect these data in the 3rd week of July (Norfolk County). We miss flowering season for asters and goldenrods, and similarly miss really early season stuff, but we do our best. This is fine, but does take a lot of time and our ongoing objectives with this work are something we are constantly trying to clarify. I don't necessarily recommend that every site needs such a detailed system – again, thinking hard about what you need to know is paramount.
- Some species do take a while to establish in an easily identifiable way. One example we have found of this is butterfly weed – it seems to take a few years to really show up. If you really need to know if every species you planted establishes, then you might consider checking in on the site for longer than just 2 years – 3 or even 4 years.
- If you are trying to create habitat for a specific species, via planting native plants, I would still recommend a focus on native vs non-native plants, especially early on, but you would also want to add in a check for your species of interest, and perhaps other components of its habitat e.g. structure, specific species composition, etc. This sort of data collecting might need to happen over several months – i.e. breeding bird season, fall, even winter.
- Photos are always good! Collect some actual data too, but take some pics from a few standardised angles each year.
- On a somewhat related note, I would also recommend that restoration sites are maintained with regards to invasives many years down the line. I appreciate how unrealistic this may be or seem, but restored areas are prone to invasive species for a long time, and I have seen several which had a lot of restoration money poured into them for 1 – 2 years, but then have been ignored and have turned into an autumn olive or buckthorn mess, which is of very limited value to anything.

Recommendation 7: There is a similar project undertaken in the Grand River Watershed at Bauman Creek. Funding has been obtained from the Loblaw Water Fund. Consideration should be given to working with the UTRCA to find funding that could be used to enhance the work being done by the proponent.

Theme #3: Remainder of Environmental Management Plan

EEPAC is generally supportive of the recommendations except as follows:

- Recommendation 9 re subdivision by laws. EEPAC is not aware of such by laws and doubts that they are enforceable by anyone. They should be included as part of the by-laws of a condominium corporation if one is formed. EEPAC believes a homeowner package followed up near to assumption by a mailing of “Living with Natural Areas” along with signage would be more effective.

Recommendation 8: Signage be installed at various points (such as the active park adjacent to the wetland. The signage include information on why this wetland is unique (e.g., the SWM4-1 mixed swamp is very usual in London) and why it is important to protect it. Advice from Environment and Parks Planning and / or EEPAC should be sought as to wording and placement. EEPAC does not recommend including information about the brook trout.

Recommendation 9: Residents receive the standard home owner package along with a follow up mailing of “Living With Natural Areas” when the subdivision is assumed.

THEME #4 – Thames Valley Parkway location

EEPAC does not support the location of the TVP close to either the Woodeden woodland nor the wetland. It also appears from p. 15 of Ricor’s June 2016 Final Engineering Report for the proponent, that the pathway is to be 10 m wide in total, 3 m for the pathway and a 3.5 m grassed buffers on either side. The buffers appears to be “extra wide” compare to other areas, particularly if this width cuts into the ESA (it is difficult to tell from materials supplied to EEPAC. It appears that filling to provide a more gradual slope to Kain’s Woods is unnecessary if the TVP were to locate either along the Union Gas line on the east side of Westdel Bourne, or if it used the Linkway or even the stormwater management pond path. These would provide more level and direct routes for users at a lower cost and require less reseeding and monitoring of the seed bank.

There is also unauthorized access to the Woodeden property that leads across private lands to the stormwater pond outlet below Tigerlily Road. By bringing bike users close to this access point, there is a risk of greater bicycle use in the nearby Kain’s Woods ESA, where such use is prohibited.

Recommendation 10: In consultation with the proponent, the TVP be relocated as per one of the above options.

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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

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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

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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,

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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

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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)

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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.

DRAFT COLONEL TALBOT PROPERTY SUBJECT LANDS STATUS REPORT

Dated November 9, 2016, received by Development Services on January 9, 2017,
at EEPAC January 19, 2017

Reviewers: C. Evans, S. Levin, A. Regehr, R. Trudeau, I. Whiteside
February 10, 2017

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 m² (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 #2 – 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 #3 – 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 #4 – 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.

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.

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.
- 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.