



303 Richmond St Ste 201  
London ON N6B 2H8

December 13, 2021

The Corporation of the City of London  
P.O. Box 5035  
300 Dufferin Avenue  
London, Ontario N6A 4L9

Dear Chair and Members, Planning and Environment Committee:

**Re: Draft Environmental Management Guidelines at PEC, Dec 13, 2021**

Please accept this letter in regard to the City's Proposed Update to the Environmental Management Guidelines. This letter is in response to the request for input tabled in October at the Planning and Environment Committee.

We believe our company is a credible participant in bringing a significant amount of new housing to the London market. Working with the City with expert resources, we have considerable experience bringing projects to bear that reach above and beyond current guidelines. We have achieved that by providing feature naturalization and restoration, and aligning greenspace to provide a softer interface between new development areas and significant natural heritage features.

The proposed guidelines have significant changes that set the stage for a very conservative approach to the environmental features. Providing buffers is a primary tool to protect existing features. Consulting with an expert firm practising ecology across southern Ontario, Natural Resource Solutions Inc. (NRSI), one of the main concerns with the Draft Guidelines being recommended for adoption is the continued use of very, very low criteria to identify Significant Woodlands (i.e. 10% tree cover), combined with an increase to 30m minimum buffers for such woodlands, as well as to very large buffer recommendations in relation to slopes. Please see the attached correspondence from our consultant for a better explanation.

When additional land is provided for buffers, it reduces the lands available for housing. This leads to increased costs per housing unit, which are passed on to consumers. In addition, evidence of subdivisions over the last decade is that woodlands function well with a 10m buffer. In our recent experience, all woodlands meet significance by City criteria. In our experience, in consultation with NRSI, even a field with very little tree cover becomes a significant woodland.



December 10, 2021

2757

Ali Soufan  
York Development  
303 Richmond Street, Unit 201  
London, ON N6B 2H8

Dear Mr. Soufan,

**RE: City of London Environmental Management Guidelines  
Review**

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Natural Resource Solutions Inc. (NRSI) has reviewed the City of London's revised Environmental Management Guidelines (EMG) on behalf of York Development. The EMG have been prepared by AECOM for the City of London. NRSI reviewed the June 2021 version of the EMG, even though a more recent December 2021 was just released. Our review was undertaken prior to the December 2021 EMG being available.

NRSI staff have numerous concerns with the revised EMG document. We are very familiar with the 2007 EMG that is currently in practice. NRSI staff use the 2007 EMG frequently on projects in London, both on behalf of developer clients, as well as on projects led by the City itself. We urge AECOM and the City to review the 2021 EMG to bring clarity to the various sections which will aid in the interpretation and implementation of the guidelines and minimize unnecessary consultation with City staff. Given the City's experience with the 2007 EMG, as well as the experience of environmental consultants that review and implement the EMG, this is the chance to get the document right, especially if it can be assumed the revised EMG will guide development in the City of London for 10 or more years.

Comments on the 2021 EMG are provided by section. More detailed comments are appended.

## **2. Preparation of Environmental Studies**

This section should clearly outline the protocol for setting up a Scoping Meeting with the City and the Technical Review Team (TRT). Since the City's process involves an Environmental Study Scoping Checklist (ESSC), this term should be used, rather than Terms of Reference. Please clarify the difference/intent behind pre-consultation meetings for Environmental Studies and pre-consultation for Proposal Review Meetings (including Initial Proposal Report, IPR).

"Net negative impacts" is used throughout the EMG, but is not a term that is typically used, and it is not used in The London Plan. "Net" is usually used in regard to "net benefits" or "no net loss". Consider using established terms such as "no negative impacts" or "no residual impacts". Refer to the Natural Heritage Reference Manual (OMNR 2010, Sections 13.5.2.8 and 13.5.2.9).

The 2021 EMG speak to avoiding impacts and mitigating impacts that cannot be avoided, as well as compensating for unavoidable impacts. This is generally known as the "mitigation

hierarchy”, but it should include minimization of impacts as well. Minimization of impacts is referred to a few times in the 2021 EMG, but generally left out.

Please clarify whether or not unevaluated wetlands need to undergo a full evaluation for each and every development application, even when the wetland will be retained with a full 30m buffer. Wetland evaluations according to the Ontario Wetland Evaluation System are lengthy and onerous, and require the evaluation of all wetland units within a catchment area, often far outside of a development application limit, which will have implications to other properties. As well, field work is usually recommended within all wetland units, but likely not possible for wetland units outside of the subject property.

### **3. Evaluation of Significance and Ecological Function**

The Woodlands evaluation section is an improvement over the 2007 EMG as it provides beneficial clarity, however a major concern with the premise still exists. The EMG states that “all Unevaluated Vegetation Patches, woodlands and vegetation patches greater than 0.5 ha” are to go through the evaluation process for Woodland significance, as “the Ecological Land Classification (ELC) System for southern Ontario (Lee et al., 1998), [identifies] a treed area is any community with tree cover >10%.” The ELC book defines “treed” as “a community with a tree cover of >10%”, however, in practice “woodlands” are defined as having tree cover between 35 and <60% and “forests” are areas with a tree cover of at least 60%. Provincial guidance uses the Forestry Act definition for “woodland”, or defines woodlands as “a tree crown cover of over 60% of the ground, determinable from aerial photography” (OMNRF 2012). As such, it is the opinion of NRSI that only such areas (i.e., vegetation communities with at least 60% tree cover) should be evaluated for woodland significance, which conforms with all other municipalities that NRSI is aware of. The City of London is the only municipality with such a low threshold for “woodland” (i.e. tree cover of 10%). Thickets, savannahs, cultural woodlands, and “unevaluated vegetation patches” (that are not comprised of a forest), should not be evaluated for woodland significance (they may be significant for other reasons, but are not “woodland”).

With regard to Environmental Significant Areas (ESAs), the EMG should provide guidance on how to deal with Potential ESAs that occur along the periphery of, or adjacent to, an existing ESA. In the experience of NRSI, City staff have directed consultants to treat Potential ESAs as confirmed ESAs and not evaluate the Potential ESA in isolation according to the criteria, since evaluation in isolation would not evaluate the features/functions of the greater ESA as a whole.

Numerous documents are referred to that are not easily accessible online. Our request is that these be made available through the City’s website.

### **4. Boundary Delineation of Natural Heritage Features and Areas**

Critical Function Zones (CFZs) are introduced as important habitat areas beyond the wetland boundaries, and the EMG state that these non-wetland areas must be included as development constraints. However, it should be made clear that the CFZ is not part of the wetland (see EMG Section 5.1 as well). Biophysical functions or attributes that are directly related to the wetland should be evaluated as Significant Wildlife Habitat.

Related to ESAs, and as mentioned above, the EMG should provide guidance on how to deal with Potential ESAs that occur along the periphery of, or adjacent to, an existing ESA.

Section 4.7, Boundary Delineation Guidelines, should clarify what boundaries this pertains to, i.e., ESAs. The boundary delineation guidelines provide some clarity over the existing EMG,

however some further clarification would be appreciated, in accordance with the attached comments.

#### **5. Determining Ecological Buffers**

Table 5-2 identifies a 5m buffer for Upland Corridors and Meadows. The requirement of this is questioned, given that an Upland Corridor would be identified at an appropriate width and may not be comprised of any natural heritage features at the time of establishment. Meadows also generally do not require a buffer, unless they provide SWH or another important function (which is evaluated separately and would require its own buffer).

Table 5-3 recommends very large buffers where the buffer is comprised of a slope down to a natural heritage feature. Please provide supporting documentation for the very wide buffers proposed, as they appear excessive.

Table 5-4 lists invasive species management for the outer 10m of a natural heritage feature only. Greater flexibility should be provided, as it may provide an overall ecological benefit to provide more fulsome invasive species management within an entire natural heritage feature, as opposed to a larger buffer.

#### **7. Environmental Monitoring**

Please clarify the differences between pre-construction monitoring and baseline monitoring, long term monitoring and post-construction monitoring, as well as post-construction and post-development monitoring. The section seems to use terms interchangeably, and in part also imply differences between them.

#### **Appendix C: Data Collection Standards**

The Data Collection Standards are poorly written. The triggers for survey requirements, protocols, and considerations are unclear and confusing. Many references cited are out of date and the appendix in general does not represent industry standards. This section requires an overhaul. Please see the attached detailed comments.

Should you have any questions or comments regarding this letter, please do not hesitate to contact the undersigned.

Sincerely,  
Natural Resource Solutions Inc.



Katharina Richter  
Senior Biologist

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## References

- Ontario Ministry of Natural Resources (OMNR). 2010. Natural Heritage Reference Manual for Policies of the Provincial Policy Statement, Second Edition. March 18, 2010.
- Ontario Ministry of Natural Resources (OMNR). 2012. Technical Definitions and Criteria for Key Natural Heritage Features in the Natural Heritage System of the Protected Countryside Area. Technical Paper 1.

**Appendix I**  
**Detailed Comments**

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**NRSI's review of London's revised EMG – June 2021 version (Report to Planning and Environment Committee, PEC, October 18, 2021)**

- Check entire document for consistency in the use of acronyms; spelling; spacing; capitalization; etc. Some editorial edits have been mentioned in the table, but not all.

Section	Comments
<b>2.</b>	<b>Preparation of Environmental Studies</b>
2.1	- 2 <sup>nd</sup> sentence requires a comma to clarify text - The reference to a TOR is misleading, as the intent is an ESSC. The term ESSC should be used throughout. - Clarify the difference/intent behind the pre-consultation meeting for Environmental Studies and the pre-consultation for the Proposal Review Meeting (including IPR). - This section should include a definition of SLSR
2.2.1	- Correct acronym in sub title (EESC to ESSC)
2.2.2	- Is an email sufficient for an environmental study scoping letter? If so, please state this. - Correct a few grammatical errors (2 <sup>nd</sup> line: that that); space after period at end of 3 <sup>rd</sup> line; provide new name for the MNRF; spacing for "studies/disciplines" in 3 <sup>rd</sup> paragraph.
2.3	- note a few grammatical errors in first sentence: delete the 2 <sup>nd</sup> "level of" in mid-sentence; change "required" to "require"
2.4	- May add "(i.e. impact assessment)" to final sentence to clarify.
2.5	- Correct a few grammatical errors: first paragraph: add space between "but" and "new"; 3 <sup>rd</sup> line: delete the 2 <sup>nd</sup> "under the"; 2 <sup>nd</sup> paragraph: infrastructure <u>are</u> proposed; 3 <sup>rd</sup> line: delete the 2 <sup>nd</sup> "they" - Last sentence in 2 <sup>nd</sup> paragraph is important but awkwardly worded. - Figure 2.1 is not referenced in text and provides little/no value.
2.6.1	- "Net negative impacts" is mentioned for the first time. Negative impacts are generally not referred to in this way. Consider using established terms such as "no negative impacts" or "no residual impacts". Refer to the Natural Heritage Reference Manual (OMNR 2010, Sections 13.5.2.8 and .9). "Net" is usually used in regard to "net benefits" or "no net loss". - Delete the comma prior to the first bracket in the first paragraph.
2.6.2	- Generally reference to maps should be in chronological order; 2 <sup>nd</sup> sentence in 2 <sup>nd</sup> paragraph is awkwardly worded
2.6.3	- Correct spelling of "federal" in last sentence
2.6.4	- #4, mid paragraph: add a comma before "as appropriate" - #5 should include "minimization" as well (i.e. avoid, minimize, mitigate, compensate); some wording and spacing corrections in this paragraph would be helpful, including and especially in 2 <sup>nd</sup> paragraph - Figure 2.2: Figure should refer to SLSR throughout, as an EIS may not be required; EMP is listed in final icon but is not discussed in text. Need to define EMP and provide explanatory text.
2.6.6.4	- "(4) animal movement corridors and ecological linkages" are listed and it states that these are noted above, but this one has been missed. Include in the EIS components Section 2.6.5.
2.6.6.5	- OP Policy 1333 states that unevaluated wetlands must be evaluated. This section also states that wetlands must be evaluated under the OWES. This is a very lengthy and tedious process in most cases. Please confirm whether a full OWES evaluation is

	necessary wherever an unevaluated wetland unit cannot be completed within an evaluated wetland complex. Where that is the case, does the wetland evaluation need to be updated with the additional wetland polygon(s)?
2.6.6.8	<ul style="list-style-type: none"> <li>- Was "minimization" omitted on purpose? Minimizing impacts is generally part of the mitigation hierarchy. Minimization of impacts is mentioned in Section 6 (3<sup>rd</sup> paragraph).</li> <li>- Mitigation: spelling error: "director" should be "direct"; add 's' to "measures" (2x); NHF acronym was not used before, should be explained and used throughout report if it is used; sometimes Environmental Management Guidelines is spelled out, other times EMGs is used</li> </ul>
2.6.6.10	- Conclusion Statement: first sentence needs some cleaning up.
2.6.6.11	- Appendices: resumes of field staff are listed as required. Is this required for all field staff, or only those leading the studies? On some large projects, consultants may have very many staff in the field.
<b>3.</b>	<b>Evaluation of Significance and Ecological Function</b>
3.1.2.	<ul style="list-style-type: none"> <li>- Consistent with provincial guidance, only woodlands with a tree canopy cover of at least 60% should be evaluated for woodland significance. Thickets, savannahs, and cultural woodlands are not "woodlands" according to the provincial definition or the Forestry Act definition.</li> <li>- Some minor comments: <ul style="list-style-type: none"> <li>Criterion 1.2 A) – it may be beneficial to provide more clarity on what local vegetation cover constitutes; it currently says all habitat types. Would this include residential yards with vegetation cover, as well as meadows, etc?</li> <li>Criterion 2.2 A) Second paragraph, second sentence – note extra space and comma in sentence.</li> <li>Criterion 2.2 C) – It may be helpful to specify that "Regional Concern" species in the Avian Conservation Assessment Database are those species with a value of 1 in the RC column.</li> <li>Criterion 2.3 C) – The paragraph above the Criterion Rankings refers to "important habitat components" while these are called "critical habitat components" in the Criterion Ranking explanations; terminology should be consistent.</li> <li>Criterion 5.1 A) – it may be helpful to clarify that communities with SRANKs that are between two values (e.g. S4S5) would be considered the lower of the two SRANKs (i.e. the more conservative approach)</li> </ul> </li> </ul>
3.2	<ul style="list-style-type: none"> <li>- Correct the reference to the report section.</li> <li>- Second paragraph requires more context to improve readability. The reference to Section 3.1.2.2 does not exist as a section in the document. Note the two "to" in the last sentence.</li> </ul>
3.2.1	- More context is needed to explain what Potential ESAs are and how to evaluate them. For instance, what is the process to evaluate a Potential ESA that occurs along the periphery of or adjacent to an existing ESA? In our experience, City staff have directed consultants to treat Potential ESA as confirmed ESA and not evaluate the Potential ESA in isolation according to the criteria, since evaluation in isolation would not evaluate the features/functions of the greater ESA as a whole.
3.2.3	- Some of the reference documents are quite old and not available online; can these documents be available centrally and electronically for consultants' use?
3.3	- More guidance is required for when an OWES wetland evaluation is required. The current text reads as if wetland evaluations are obligate through a site characterization study, to be completed by the proponent. Leaving the wetland as an Unevaluated unit should be permitted if no direct impacts are proposed and sufficient buffers are provided.



<b>4.</b>	<b>Boundary Delineation of Natural Heritage Features and Areas</b>
4.0	- The first sentence of the second paragraph states that "Ecological boundary delineation is required before natural features and areas can be evaluated for significance". As such, it would make sense to change the order of the sections in the EMG, to have the Boundary Delineation section precede the Evaluation of Significant and Ecological Function section.
4.1	- The reference to Table 2.1 is not appropriate for the context. Table 2.1 of the EMGs relates to what triggers an EIS.
4.1	- Point 5 – it appears the sentence has been cut off.
4.2	- In the 5 <sup>th</sup> paragraph where Critical Function Zones (CFZs) are introduced as important habitat areas beyond the wetland boundaries, the guidelines state that these non-wetland areas must be included as development constraints. Through what criteria is this type of constraint to be evaluated? It would not be reasonable to extend the boundary of a wetland beyond its limit, defined according to the 50/50 upland/wetland vegetation rule in OWES. Biophysical functions or attributes that are directly related to the wetland should be represented as SWH, and not by extending the wetland boundary as a CFZ.
4.6	- Same comment as made to Section 3.2.1: More context is needed to explain what Potential ESAs are and how to evaluate them. For instance, what is the process to evaluate a Potential ESA that occurs along the periphery of, or adjacent to, an existing ESA? In our experience, City staff have directed consultants to treat Potential ESA as confirmed ESA and not evaluate the Potential ESA in isolation according to the criterion, since evaluation in isolation would not evaluate the features/functions of the greater ESA as a whole.
4.7 Guideline 1	- Please clarify the first sentence under Conditions. - In the second paragraph under Conditions there appears to be an extra "and" following (MNR, 2000b) - Can any guidance for species that use anthropogenic habitats such as Chimney Swift or Barn Swallow be included in this guideline?
4.7 Guideline 2	- Criteria d) is confusing, is there a better way to illustrate the figure? Is this simply identifying that a wetland CFZ independent of a vegetation patch would be considered its own feature? (See related comment to Section 4.2).
4.7 Guideline 3	- What does the red line denote in illustration (a)? - Illustration (b) can be clarified if the 30m width is added. Can the linkage be comprised of open habitats such as meadow, or even lands that are currently unvegetated?
4.7 Guideline 4	- Is there limit to the distance between vegetation patches that would be considered a single feature if they are connected by a watercourse? Would only natural, naturalized, or cultural vegetation communities adjacent to the watercourse be considered part of the feature, or would this not in essence be a watercourse buffer or would a feature be further buffered beyond the area included in the watercourse corridor? This guideline seems much too broad when compared to the identified 85m distance between vegetation patches connected by a watercourse in the 2007 EMG.
4.7 Guideline 5	- The sixth bullet under Conditions should have an 'and/or' following the semi-colon for clarity. - The seventh bullet seems like a very broad catch-all, would not all woodlands under 2ha in size provide a temporary refuge for wildlife. Are there any situations where a satellite woodland within 100m of a patch would not be included in the feature boundary? - Would another satellite woodland, within 100m of a satellite woodland already included in the patch (that meets one of the conditions), but not within 100m of the main patch also be included in the patch? How far could this potentially extend for, would it be possible to have a satellite woodland 500m from the main vegetation patch included in the feature boundary if it were linked by a series of other satellite woodlands within 100m of one another?
4.7 Guideline 6	- Criterion a) - Is there a recommended width of cultural meadow that should be included in the feature? Would this be evaluated on a case-by-case basis by a qualified professional or can further guidance be provided to identify how wide this area should be? This

	could potentially cause confusion since cultural meadow is often considered part of a buffer area from woodlands, wetlands, etc. Would the area of meadow within the patch also require a buffer?
4.7 Guideline 7	- There is a typo at the end of the first sentence after GUIDELINE 7, criteria should be the end of the sentence.
4.7 Guideline 8	- Some clarification for criteria a) would be helpful since a few of the examples are confusing. In what case would a golf course be under 1 hectare? Is this referring to a portion of a golf course? In the illustration example, would the a portion (i.e. 1ha) of the southern managed feature be included in the patch boundary?
<b>5.</b>	<b>Determining Ecological Buffers (Reviewed from December 2021 version)</b>
5.1	- Related to comments made above, it is not appropriate to include the CFZ within the wetland boundary, as this is contrary to the OWES. Where identified, CFZs may be protected as part of the feature with an additional buffer.
5.2	- Note spelling of "proposed" in first paragraph; "recommendations" in 4 <sup>th</sup> pgh.
5.3	- Note error at end of 2 <sup>nd</sup> paragraph ('once' is written twice)
5.3.2	- Table 5-2: What is the value in providing buffers to Upland Corridors and Meadows where these do not provide SWH or habitat for SAR? When these are identified for protection, they will be identified to the required width. - Table 5-2: For footnote #4, add a comma after Woodlands: ...less than 2 ha, and Woodlands, where....
5.3.2/5.3.3	- These sections do not address headwater drainage features. Does the City want to provide some guidance with regards to buffers from these features where they have a management recommendation of Conservation or Protection? - These sections do not address buffer "rounding". For instance, if it is fairly acceptable practice to allow some areas of narrower buffers, if areas of larger buffers are provided, for an overall larger buffer area. Is such an approach acceptable? If so, it should be addressed in the guidelines. - The EMG should provide guidance on buffer areas in situations where the typical buffer area is already developed, for example a parking lot or building. Are narrower buffers acceptable in such situations, where existing development will, at least in part, be removed to provide the NHF a functioning buffer, where previously there was none?
5.3.3	- Table 5.3: The buffers required for slopes seem excessive. Please provide supporting documentation for the recommended buffer widths or change the widths in accordance to what is recommended through a literature review.
5.3.4.1	- Table 5-4: This table lists invasive species management within 10m of the NHF. Sometimes significant invasive species removal within a NHF may be recommended and may provide greater ecological value than a larger buffer. Is such an approach acceptable in the City of London?
5.4	- In sentence preceding the bullets: "in" is to be replaced with "is"
<b>6.</b>	<b>Ecological Replacement and Compensation</b>
6.	-Figure 6.1 – title: correct spelling of "the"; minimization is missing from figure. The figure states the goal is "no net impacts", yet the text (Section 6.1.2) states the goal is "net environmental benefit". What is the difference between "replacement" and "compensation"?
6.1.1	- Spelling: first paragraph: "ther" should be "the";
6.1.2	- Spelling of "although" in 2 <sup>nd</sup> paragraph
6.2	- Note missing bracket in last sentence in paragraph starting with "Notably". Please review the entire sentence for clarity; in paragraph starting with "In instances", correct spelling of "falls" (not "calls")

	- Text refers to the "applicable conservation authority", but all of London is within the jurisdiction of the UTRCA (here and elsewhere).
6.3	- Correct spelling: end of 2 <sup>nd</sup> bullet; end of 6 <sup>th</sup> bullet;
6.5	- correct spelling: 2 <sup>nd</sup> paragraph should be "communities";
6.6.1	- Under 'Ecological Considerations' – midway through paragraph, check word spacing;
<b>7.</b>	<b>Environmental Monitoring</b>
7.1	- add required space between words at end of 2 <sup>nd</sup> last bullet
7.2.2	- If land is to be transferred to City, long term monitoring will be undertaken by City (post assumption). If land is to remain private, long term monitoring is to be undertaken by developer. What is defined as long term monitoring? Is this dependent on EIS?
7.2.3	- Pre-construction monitoring examples includes surface and groundwater monitoring, as well as encroachment into the NHS and buffers. The 2 <sup>nd</sup> bullet (monitoring of NHS and encroachment) is better suited for construction and post-construction monitoring. Is wildlife monitoring to be considered here, within the requirements for pre-construction monitoring? Section 7.2.5 states that baseline data should be collected 1-2 years prior to construction. Is this not pre-construction monitoring? Please clarify the difference between baseline monitoring and pre-construction monitoring. (See also Appendix A)
7.2.5	- Please clarify the relationship between post-construction monitoring and post-development monitoring. (See also Appendix A)
7.2.5.2	- reference to NVCA 2019 can now be updated to their final document (2021)
	<b>Appendices</b>
Appendix A	Under Monitoring, "pre-construction works" should likely be changed to "pre-construction"
Appendix C	Data Collection Standards – See separate Table of comments, below.
Appendix D	No discrepancies between Appendix D and the evaluation Criteria detailed in Section 3.1.2 noted. Overall this table is a good improvement from the 2007 EMG.

### Comments on Appendix C: Data Collection Standards

The Data Collection Standards are poorly written. The triggers for survey requirements, protocols, and considerations are unclear, confusing, and not clearly presented. Many references cited are out of date and the appendix in general does not represent industry standards.

Section	Comments
Background, Guidelines for Data Collection, and Inventory Protocols paragraphs	<ul style="list-style-type: none"> <li>- 'MNRF, 2010a' refers to the <i>Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales</i> document. This should be corrected to the <i>Natural Heritage Reference Manual</i>, 'MNRF, 2010b' (as per the reference list order on Page 134).</li> <li>- Correct a few grammatical errors (see bold text below):</li> <li>a) '...provide strong field data to inform impact assessments, mitigation <b>measures</b>, and monitoring...'</li> <li>b) '...the intention of <b>the</b> Data Collection Standards is to ensure that all new information collected for various studies, including EISs, uses...'</li> <li>c) '...in accordance with seasonal timing windows, for various, inventory types include, but are not limited...' (remove comma between 'various' and 'inventory')</li> <li>- The terms 'Environmental Study' and 'EIS' (no initial definition of the acronym for EIS is provided within the appendix) are used interchangeably, but presumably 'Environmental Study' intends to capture all types of studies (for Environmental Assessments, Subwatershed Studies, SLSR, etc.) while 'EIS' refers specifically to Environmental Impact Studies that are required as part of development applications. Consider defining all terms in the appendix preamble and ensuring terminology consistency throughout.</li> <li>- Clarification on what is meant by 'three- or five-season inventory' is requested. The subsequent list of typical survey timeframes references 6 different timeframes. It would be more standard to refer to three- (spring, summer, fall) or four- (spring, summer, fall, winter) season inventory.</li> <li>- Re: 'An outline of the comprehensive inventory protocols for species occurring in the study area and adjacent lands must be conducted by qualified professionals in the appropriate seasons as described below.', this sentence implies that only an 'outline' of the inventory protocols should be conducted by qualified professionals, but it is the surveys themselves that should be done by a qualified professional. Sentence revisions recommended.</li> </ul>
Inventory Protocols- List of Survey Timeframes	<ol style="list-style-type: none"> <li>1. Early Spring (late March / early April): -Should also include reference to Headwater Drainage Feature (HDF) Assessments (if including, as per the recommendation below, 1<sup>st</sup> survey takes place in March/early April), as well as Reptiles (depending on the year, reptile emergence, particularly snake emergence, can and does occur in late March/early April)</li> <li>2. Spring (late April – May) - If including HDF Assessments, include here as well (2<sup>nd</sup> survey takes place in May)</li> <li>3. Early Summer (June): -Aquatic habitat assessments are recommended to occur during baseflow conditions generally anytime between late June and late September. Depending on the type of watercourse, fish community assessments may need</li> </ol>

	<p>to occur earlier in the year (e.g., for intermittent features, May-early June fish community sampling when water levels are seasonally elevated).</p> <ul style="list-style-type: none"> <li>-Reptiles should be included here as well</li> <li>- 'Butterflies and Insect Monitoring' is recommended to be revised to simply 'insect surveys' or 'insect monitoring' since butterflies are insects</li> </ul> <p>4. Summer (early July/early August)</p> <ul style="list-style-type: none"> <li>-Recommended that this timeframe be adjusted to 'July/August', as the current wording excludes most of the month of August when it is still appropriate to do summer surveys</li> <li>- If including HDF Assessments, include here as well (3<sup>rd</sup> survey takes place in July/August)</li> </ul> <p>-Again, recommend that 'Butterflies and Insects' be revised to 'insect surveys/monitoring'</p> <p>5. Fall (September-October)</p> <ul style="list-style-type: none"> <li>-A comma is required between 'Migratory birds' and 'Vascular Plants' as well as between 'Vegetation Communities' and 'Reptiles'</li> <li>-Unclear why 'Mammals' are included here (which sampling protocol is this is reference to?) but not in the 4. Summer category.</li> </ul> <p>6. Winter (November-February)</p> <ul style="list-style-type: none"> <li>-The term "Bat leaf off surveys" is recommended to be modified to 'Bat habitat assessments (leaf-off)', and added to the Early Spring category as well (leaf-off runs from November to April)</li> <li>-Winter wildlife surveys should occur between January and early March; consider revising the 'Winter' timeframe accordingly</li> </ul>
Inventory Protocols- Headwaters	<ul style="list-style-type: none"> <li>- Headwater Drainage Feature (HDF) assessments are not included in the list of surveys. More and more, conservation authorities request that HDF assessments be completed as part of environmental studies, and the inclusion of this survey type is recommended due to the importance of appropriately managing HDFs from both a hydrological and ecological perspective. HDF assessments should be completed according to Ontario Stream Assessment Protocol (OSAP) V.10 Modules 10 or 11 (Gorenc and Stanfield 2017), and management recommendations determined in reference to the 2014 <i>Evaluation, Classification and Management of Headwater Drainage Features Guidelines</i> prepared by the Toronto and Region Conservation Authority (TRCA) and Credit Valley Conservation (CVC). These guidelines are appropriate for areas outside of the TRCA/CVC jurisdictions, and are the best available guidelines for evaluating and managing HDFs.</li> </ul> <p>*Gorenc, S. and L. Stanfield. 2017. Ontario Stream Assessment Protocol (OSAP). Version 10. Section 4. Modules 10 and 11. Constrained and Unconstrained Headwater Sampling.</p> <p>*Toronto and Region Conservation Authority (TRCA) and Credit Valley Conservation (CVC). 2014. Evaluation, Classification and Management of Headwater Drainage Features Guidelines. January 2014. <a href="https://cvc.ca/wp-content/uploads/2014/02/HDFA-final.pdf">https://cvc.ca/wp-content/uploads/2014/02/HDFA-final.pdf</a></p>
1. Vegetation Communities	<ul style="list-style-type: none"> <li>- A summary of tree species with age/size class distribution, and basal area by size class is not a level of detail that is normally captured during ELC surveys and provides minimal (if any) value to the characterization of</li> </ul>

	<p>natural features. It should not be a standard requirement. A successional stage estimation (i.e., pioneer, young, mid-aged, mature, old-growth) provides a sufficient level of detail in this regard. Should this information be needed, such as if direct impacts or removal of a treed area is proposed, this information can be provided in the Tree Protection Plan report. It is not reasonable to capture this level of detail for each treed vegetation community, especially if it will be retained and buffered.</p>
<p>2. Vascular Flora</p>	<ul style="list-style-type: none"> <li>- 3-season (spring, summer, fall) inventory is industry standard and sufficient to capture all vascular flora in all terrestrial/wetland/aquatic habitat types if timed appropriately throughout growing season; this includes difficult Genera to identify such as <i>Poaceae</i>, <i>Juncaceae</i>, <i>Cyperaceae</i> where flowering specimens are needed for positive identification</li> <li>- UTRCA has recently been requesting 4-season inventories, which provides minimal (if any) additional value to a particular property's flora</li> <li>- in the "Inventory Protocols" subheading preceding Vegetation Communities and Vascular Flora sections, vascular plant surveys are listed in 4 seasonal timing windows, which is misleading as both of these sections indicate flora surveys to be done in 3 seasons.</li> <li>- Reference to 'MNRF SAR in Ontario (Bowman, 1996)' is outdated and is recommended for removal. Current provincially rare species should be those identified with S-Rank S1 to S3 (NHIC) and on the List of Species at Risk in Ontario (SARO) under the <i>endangered Species Act</i> (ESA, 2007).</li> <li>- regional rarity status should be assessed in the City of London using Oldham 2017 list of the Carolinian Zone.</li> </ul>
<p>3. Breeding Birds</p>	<ul style="list-style-type: none"> <li>- Under the 'Breeding Birds' heading, reference is made to all types of bird surveys and not only breeding (breeding, migratory, overwintering); recommended that the main heading be 'Bird Surveys' with subheadings for the other categories</li> <li>- While reference is made to both 'breeding and migratory' bird surveys, no further information is provided on the expectations or protocols for migratory surveys. Additional clarification is needed.</li> <li>- Breeding bird surveys should follow the OBBA guidelines (2001) and are generally to be completed between dawn and 5hrs afterwards (rather than 5:00AM-10:00AM since dawn changes considerably from in the breeding season).</li> <li>- Reference is made to utilizing transects or point counts, but in some cases area searches may be adequate to assess migratory and breeding birds, particularly on small sites.</li> <li>- American Woodcock is singled out as a species to be surveyed for during crepuscular surveys, but it is unclear for what purpose as this is not generally considered a rare species and is not a Species at Risk.</li> <li>- Standardized protocols for surveying crepuscular bird species are not provided in the OBBA 2001 guide for participants. Instead the new guidelines are to be referenced, specifically the <i>Ontario Nightjar Instruction Manual</i> (OBBA, February 2021)</li> <li>- The OBBA has prepared targeted survey protocols for owl species that have the potential to occur within southern Ontario. It is important that the survey protocol be targeted to the specific owls that have the potential to occur. In London, this is generally Eastern Screech Owl (<i>Megascops asio</i>) and Great Horned Owl (<i>Bubo virginianus</i>), and as such, the most often utilized protocol is the OBBA <i>Ontario Eastern Screech Owl Survey Instruction Manual</i> (April 2021). Note that no specific protocol for surveying for Great Horned Owl is prepared as this species may be detected during other nocturnal surveys and does not readily respond to playback. Long-</li> </ul>

	<p>long-eared Owl (<i>Asio otus</i>) also have the potential to breed within the London area, and if habitat is deemed to be present, the <i>Ontario Long-eared Owl Survey Instruction Manual</i> (July 2021) should be used.</p> <p>-the new <i>Marshbird Survey Instruction Manual</i> (OBBA April 2021) should be utilized as the newest survey protocol for carrying out marshbird surveys.</p> <p>- A correction to the references for Raptor Overwintering Area surveys is recommended. The text implies that 'MNR 2015a' is the source for the Bird and Bird Habitats: Guidelines for Windpower Projects, but it is the SWH Criteria Schedules for Ecoregion 7E. Clarification is needed.</p> <p>-Reference to the Forest Breeding Bird Survey (2008) is made for the first time in the final bullet; is this the protocol that is required to be followed, and when? It needs to be made clear when it is acceptable to utilize the OBBA 2001 guidelines vs. the Forest Breeding Bird Survey (2008) techniques. Revisions to the overall Breeding Birds section is recommended to provide more clarity on which protocols are required to be used.</p>
<p>4. Herpetofauna</p>	<p>- Recommended that this section be divided into separate categories for better clarity and organization, i.e., Anurans, Salamanders, Turtles, Snakes</p> <p>- consider providing guidance with regards to appropriate weather for each type of survey.</p> <p>-The specific triggers for the various survey types outlined are unclear. More information should be provided to clearly state when certain surveys are needed.</p> <p>-In relation to the above-noted point, the on-site confirmation of suitable habitat for herpetofauna should be the first step in the assessment process (as this will feed into the requirements for certain survey types)</p> <p>- Clarification on the reasons behind the need to complete surveys for lungless salamanders via the Joint EMAN / Parks Canada National Monitoring Protocol for Plethodontid Salamanders (Zorn et al. 2004) should be provided. This protocol is a long-term monitoring protocol meant to monitor ecosystem health via salamanders as indicator species. The results of this survey type would not indicate the presence of any provincial or federal protected habitat types, including Significant Wildlife Habitat types or Species at Risk habitats. It is recommended to consider the objective of completing this survey type and how the results will be used to determine whether or not it should be included as a suggested survey.</p>
<ul style="list-style-type: none"> <li>• 1<sup>st</sup> bullet point</li> </ul>	<p>- It is unclear why only newts and mole salamanders are specified here; the trigger for these survey types would typically be either the presence of candidate Amphibian Breeding Habitat (Wetland or Woodland) Significant Wildlife Habitat (SWH) or the potential presence of the Species at Risk Jefferson Salamander (<i>Ambystoma jeffersonianum</i>) in the prescribed study area combined with suitable vernal pool or wetland breeding habitat. This distinction should be made clear, and these survey types (e.g., minnow trapping, pitfall traps, active hand searches, genetic testing) could be discussed as part of subsections 8. Significant Wildlife Habitat (SWH) and 10. Species at Risk (SAR) instead.</p> <p>- The appropriateness of referring to McLaren et al (1998) (<i>Wildlife monitoring programs and inventory techniques for Ontario. South Porcupine: Ontario Ministry of Natural Resources - Boreal Science Section</i>) is questioned. It is recommended to update this reference to: Jefferson Salamander Recovery Team. 2013. Sampling Protocol for Determining the Presence of Jefferson Salamanders (<i>Ambystoma jeffersonianum</i>) in Ontario. Prepared by the Jefferson Salamander Recovery Team. 11 pp.</p> <p>- Determining the timing of salamander surveys should be done by a qualified professional with expertise in the biology of the target species. Consultation with local experts and/or the NDMNRF is not specifically necessary, or even always possible during a given year; if an individual is qualified to conduct the surveys (as is required</p>

	per the statement earlier in the Appendix), they are qualified to determine the timing of surveys and the specific techniques that will be used. In some cases, such as when Amphibian Movement Corridor SWH or Jefferson Salamander habitat is being assessed, consultation with the NDMNRF (SWH) or the MECP (SAR) can be completed.
• 3 <sup>rd</sup> bullet point	- Recommend adding in number of surveys and season for each, and weather conditions for each survey. Also add that surveys should be as close to suitable breeding habitat as possible in order to record species calling within 100m.
• 4 <sup>th</sup> bullet point	- Do "observational surveys" refer to targeted visual searches in addition to anuran call surveys? Please clarify, including the number of targeted searches required. Generally additional targeted searches are not required, although ecologists will note all species observed during any site visit and site survey.
• 5 <sup>th</sup> bullet point	-The inclusion of 'gravel road shoulders' as targets of turtle nesting surveys is not recommended; these areas often represent 'population sinks' and are not considered as protected SWH (OMNR 2000, MNRF 2015a) - It is recommended to elaborate on the types of turtle surveys that could be completed as nesting surveys are only one type. For example, visual encounter surveys as outlined in MNRF (2015) are also recommended to be considered where appropriate habitat is present.
• 6 <sup>th</sup> bullet point	- Following the Survey Protocol for Species at Risk Snakes in Ontario (MNRF 2016), Visual Encounter Surveys (VES) can be completed within the snake active season which extends beyond the late April to late June timing window referenced in the Data Collection Standards (generally April - September). -The word 'searches' should be removed following Visual Encounter Surveys in the 1 <sup>st</sup> sub-bullet - It is recommended to refer to "Cover board surveys" as "Artificial Cover Object (ACO) surveys" as per MNRF (2016). -A WSCA is required for all ACO surveys and active hand searches - not only when snakes or other wildlife may be handled, but when they may be disturbed during a survey (e.g., by lifting natural cover objects). An Animal Care Protocol is only required when snakes or other wildlife will be handled. - It is unclear why Queensnake surveys are singled out, as other snake survey protocols may be required as well. - Queensnake surveys may also be necessary on smaller tributaries to the Thames River. - Peter Mill's book 'Metamorphosis' is also a really good resource for amphibian egg/larvae ID.
5. Mammals	-This section reads poorly and is recommended to be carefully reviewed and revised to reflect more clarity and organization on mammal survey requirements.  <u>Bat Surveys:</u> 2 different types of bat-related SWH should be considered: a. Bat Maternity Colony b. Bat Hibernacula  -Both SWH types should be assessed in reference to the Bats and Bat Habitat: Guidelines for Wind Power Projects (MNRF 2011), the most up-to-date guidance from the NDMNRF, and the criteria outlined in the SWHTG (2000) and Criteria Schedules for Ecoregion 7E (MNRF 2015).



SAR bats and their habitats:

- Survey requirements for SAR bats are continually being updated based on the most current information. It is recommended to consult with MECP to confirm the most up-to-date survey protocols are being used.
- Habitat can include both treed habitats as well as human-made structures (e.g., buildings, bridges, etc.); both habitat types should be assessed:

Treed Habitats

- At present, methods outlined in the following survey protocols are considered acceptable:
  - \*Ministry of Natural Resources and Forestry (MNRF). 2017. Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis and Tri-colored Bat. April 2017.
  - \*Ministry of Environment, Conservation and Parks (MECP). 2020. Maternity Roost Surveys (Forests/Woodlands). 3 pp.
- All treed vegetation communities have the potential to provide suitable bat SAR roosting habitat, including for maternity colony roosting. In addition to referring to the above-noted survey protocols, it is recommended to consult with the MECP and a qualified biologist to determine the approach to assessing species presence and use of potential habitats. This may include habitat assessments, acoustic monitoring and/or capture surveys. Note, the MECP currently does not support the use of capture surveys, but may consider their use where appropriate.

Anthropogenic Structures

- At present, methods outlined in the following survey protocols are considered acceptable:
  - \*Ministry of Environment, Conservation and Parks (MECP). 2018. Use of Buildings by Species at Risk Bats Survey Methodology. July 26, 2018. 2 pp.
  - \*Bats and Bat Habitat: Guidelines for Wind Power Projects (MNRF 2011)
- A thorough assessment of potential entry/exit points for roosting should be conducted on all anthropogenic structures that may provide suitable roosting habitat, including buildings and bridges.
- \*Exit surveys in accordance with the most up-to-date survey protocol should be completed during the peak bat maternity period to assess the presence of bat SAR and associated roosting habitat. Exit surveys should consist of a combination of visual and acoustic surveys as per MECP (2018).

Other mammals:

- It is not necessary to clarify what is meant by 'other mammals' by way of listing (e.g., deer, badgers, moles). Recommend giving examples of non-bat SAR mammals that may need to be assessed (e.g., American Badger)
- 'Other mammal-related SWH' beyond the above-noted Bat Maternity Colony and Bat Hibernacula SWH is restricted to 2 types: Deer Winter Congregation Areas and Habitats of Special Concern and Rare mammals (such as Woodland Vole). Deer Winter Congregation Areas are typically determined and mapped by the NDMNRF. Revisions to this bullet point are recommended to incorporate these considerations.

- The Inventory Protocols- List of Survey Timeframes sections include 'Winter Wildlife Surveys' under the Winter season, however there are no further details provided in the Appendix. Winter Wildlife Surveys are

	<p>recommended to take place when ecological movement corridors may be present within a study area (and it is necessary to understand the species, abundance, main travel direction etc. of wildlife using these areas), and/or an understanding of the general level of habitat use by mammals and other wildlife is needed. In keeping with protocols used elsewhere in southern Ontario, the following approach is recommended for Winter Wildlife Surveys:</p> <ul style="list-style-type: none"> <li>• 2 surveys</li> <li>• Conducted 24-48h of snowfall &gt;2cm</li> <li>• Completed between January and early March</li> <li>• Information documented to include direct observations and sign (e.g., tracks, scat, browse, rubs, dens) for all mammals and birds</li> <li>• Mapping of high-use areas and corridors, direction of movements, etc. when possible</li> </ul>
<p>7. Aquatic communities and habitats survey</p>	<p>-A revised subsection title is recommended, similar to 'Aquatic Resource Characterization', to better capture the intent of the section</p> <p>-As noted above, it is recommended that Headwaters Drainage Feature (HDF) assessments be included in this category</p> <p>-Grammar correction: 'Technical data requirements will be determined in consultation with the City of London and may include, but is are not limited to the following...'</p> <p>-Word addition recommended: '(e.g., seine netting, minnow traps and electrofishing)'</p> <p>-Recommended that Aquatic Habitat Assessments, in addition to Fish Community Sampling, also follow OSAP methodologies (not currently indicated)</p>
<p>9. Regionally Rare Species</p>	<p>-As noted further below, this subsection may require removal and/or significant changes since it does not appear to meet the stated intent assessing regionally rare species.</p> <p>-The opening paragraph is confusing and recommended to be revised as follows (or similarly, as deemed appropriate):</p> <p>Assessments of regionally rare species should aim to determine species presence, population size (when possible), habitat availability and quality, and any other pertinent information (such as nesting areas, dens, etc.). Regionally rare species occurrences and confirmed habitats should be shown on all report mapping. Analyses of site significance should consider the presence, or potential presence of regionally rare species.</p> <p>-With the exception of Oldham 2017 (which provides regional statuses for plants in Middlesex County), none of the listed resources provide information about the relative abundance or rarity of the atlas or resource target taxa. The listed sources provide valuable background information on what species are found within a particular atlas square (usually 10km x 10km), but do not achieve the stated goal of this subsection of 'documenting regionally rare species'. A species is not considered regionally rare only because it is documented in a wildlife atlas square.</p> <p>-Several of the noted sources correspond to older versions of a particular atlas, and should no longer be referred to. The following lists the correct references that should be used for each taxa during background information review.</p>

Ontario Mammal Atlas (Dobbyn 1994)  
Ontario Breeding Bird Atlas (Bird Studies Canada et al. 2006) – until the release of the new atlas (likely to be after 2025), this is the correct source to reference  
Ontario Butterfly Atlas (Macnaughton et al. 2020)  
Ontario Odonata Atlas Database (requested through NHIC)  
Ontario Herpetofauna Atlas (Ontario Nature 2019)

The Partners in Flight program is often not used in Environmental Studies and has not been used by the City in quite some time. As it identifies targeted species of conservation concern based on a continental basis, it may not reflect local conditions in London and should not be used.