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Environmental Impact Study Guidelines

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Foreword to the City of Ottawa Environmental Impact Study Guidelines

The following Environmental Impact Study (EIS) Guidelines will support implementation of the natural heritage and EIS policies of the 2021 Official Plan and the Provincial Policy Statement, 2020 (PPS) as amended from time to time. The EIS Guidelines are intended for use by City of Ottawa staff, agencies, and applicants in the preparation and review of environmental impact studies as and when required in the development review process or under the Site Alteration By-law.

The EIS Guidelines were initially approved by Ottawa City Council on July 14, 2010. They were subsequently revised in 2012 and again in 2015 to address identified issues and to incorporate necessary updates. The most recent update to these Guidelines occurred in 2021-22, in conjunction with the development of the new Official Plan for the City of Ottawa. As part of that process, the term 'Environmental Impact Statement' was changed to 'Environmental Impact Study' in the Official Plan and its supporting plans and guidelines. Significant changes were also made to the contents of the guidelines to reflect changes in Official Plan policies with respect to development and site alteration around natural features, the Natural Heritage System, and designated environmental lands.

Transition Period

At the time of publication of these revised EIS Guidelines in early 2023, some applicants for development or site alteration approvals were already in the process of completing environmental impact statements based upon formal consultations with, and comments by, planning staff. The City does not intend for the introduction of these revised EIS Guidelines to create additional delays or expense for applicants who had already received direction from staff on the preparation and requirements of an EIS for specific development or site alteration applications, and who were, in good faith, following that direction.

Therefore, applicants are not required to adhere strictly to the new EIS Guidelines in the preparation of an EIS for a specific development or site alteration application if, prior to the release of these revised EIS Guidelines, they had: (a) received formal direction from City planning staff on the preparation and requirements of an EIS for that specific development or site alteration application (*i.e.* during a pre-application consultation or other consultation with City staff on the specific content of that EIS); and, (b), commenced preparation of the EIS in accordance with staff's direction under the previous version of these Guidelines.

It remains the responsibility of the applicant and staff to ensure that the resulting EIS meets the requirements of the Official Plan and the PPS.

This waiver only applies to development or site alteration applications already in progress at the time of the publication of the revised EIS Guidelines on the City's web page. Subsequent development or site alteration applications will be subject to the revised EIS Guidelines, even if the subsequent applications relate to the same property or project.

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1. Introduction

Ottawa has a rich and varied natural environment that includes large areas of forests, wetlands, and major rivers. Land use planning that protects the health of the environment is central to the long-term sustainability of the community and preserves the high quality of life enjoyed by City residents.

Where development or site alteration may affect significant natural areas, natural heritage features and their functions, Ontario's Provincial Policy Statement (PPS; MMAH, 2020) requires that it be demonstrated that no negative impacts will occur. Ottawa's Official Plan is consistent with the PPS, and commits the City to "seek to improve the long-term integrity and connectivity of the Natural Heritage System through land use planning, development processes, acquisition and conservation of land and support for voluntary, private land conservation and stewardship" (Section 4.8.1, policy 2). One of the tools employed by the City to meet this commitment is the Environmental Impact Study (EIS). An EIS allows the City and the applicant to identify the potential environmental impacts of a proposed development or site alteration project and plan to avoid or minimize them before they occur, as well as finding ways to compensate for impacts that cannot be avoided.

This guide outlines the process and content required for the completion of an EIS under the policies of the Official Plan. The aims are to provide a consistent approach to assessing impacts, to increase efficiency in report preparation and review, and to improve communication between the agencies and individuals involved.

This guide contains three main sections. The first section introduces the EIS and its purpose. The second section details the steps involved in planning, conducting and submitting an EIS. Finally, the third section outlines the contents required in an EIS.

References to "City staff" in this guide should be interpreted to mean planning staff with expertise in environmental impact assessment, i.e., environmental planners involved in development review or the Natural Systems unit, unless otherwise specified.

Key sections of the Official Plan that should be considered during the preparation of an EIS are as follows:

- Section 4.8 Natural Heritage, Greenspace and the Urban Forest
- Section 4.9 Water Resources
- Section 5.6.4 Natural Heritage Overlays
- Section 7 Greenspace Designations
- Section 10.1.1 through 10.1.5 Natural Hazards
- Schedules B, C11 and C12

While these policy sections are the most directly relevant, there are many related topics in the Official Plan, such as climate change, that should also be considered along with the planning context for the area.

1.1. What is an Environmental Impact Study (EIS)?

An EIS is an assessment of the potential environmental impacts of a proposed project. It documents the existing natural features on and around the proposed project site, identifies the

potential environmental impacts of the project, recommends ways to avoid and reduce the negative impacts, and proposes ways to enhance natural features and functions. The preparation of an EIS is an important step in the development application process.

The EIS helps in both planning and decision-making. As a planning tool, an EIS that is begun early can help to develop a plan that avoids negative environmental impacts by identifying areas with sensitive natural features or ecological functions for preservation. As a decision-making tool, the EIS provides agencies with the information they need to determine whether a proposed project complies with existing policies, or if further changes are necessary.

1.2. When is an EIS required?

In Ottawa, an EIS is required when development or site alteration is proposed in or within a specified distance of environmentally designated lands, natural heritage features, the City's Natural Heritage System (NHS), or hazardous forest types for wildland fire.

The EIS Decision Tool (Appendix 2) provides a checklist of the natural heritage features and adjacent areas within which an EIS is required to support development applications under the *Planning Act*. Note that the distances that "trigger" an EIS may differ, depending on the context. These distances are largely based on provincial guidance in the Natural Heritage Reference Manual (MNR, 2010). In some cases, however, a 30 metre adjacency distance has been adopted in recognition of the low likelihood of impacts occurring beyond that distance. A wildland fire assessment must be completed for any development within 100 metres of an area deemed high or extreme risk in the provincial wildfire hazard mapping or any forest community comprised of more than 50 per cent conifers by canopy area. For development review purposes, the adjacency distance is measured from the subject property boundary to the edge of the designated lands or natural feature.

Site alteration that is not associated with a *Planning Act* application may still trigger the requirement for an EIS under the Site Alteration By-law. When site alteration is proposed within the area shown on Schedule B of the by-law, an EIS may be required if the proposal includes works within 30 metres of any designated Natural Environment Area or Urban Natural Features, or any natural heritage feature identified on the City's Natural Heritage Overlay (Schedule C11 of the Official Plan). Under the Site Alteration By-law, the adjacency distance is measured from the proposed project area limits.

Definitions of the various natural heritage features that trigger an EIS are found in Appendix 5, along with a brief description of their ecological values and functions.

The Official Plan defines development as:

> The construction of and addition to buildings, changes of or intensification in use, the addition of units on existing lands, and the creation of new lots. Development also includes redevelopment, and for the purposes of this Official Plan is meant to indicate where a planning application under the *Planning Act* is required.

This definition includes the following types of development applications:

- Plans of subdivision;
- Consents (e.g., severances);
- Minor variances;
- Permissions;
- Site plan control (e.g., building, grading, road widening);
- Zoning By-law amendments; and,
- Official Plan amendments.

Provincial definitions of site alteration vary. The City's Site Alteration By-law definition is:

> …activities such as the removal of Topsoil from land, the placement or dumping of Fill on land, the alteration of the grade of land, or excavation by any means, including the clearing or stripping of vegetation from the land, the compaction of Soil or the creation of impervious surfaces, or any combination of these activities…

Applicants are encouraged to contact their local Development Information Officer, who can advise on the need for an EIS. A Development Information Officer can be reached by calling the City's service number "3-1-1" within the City boundaries, or at (613) 580-2424. If an EIS is required, the process and contents can vary depending on the situation, as outlined in Section 2.

In areas of federal or provincial jurisdiction, an environmental assessment may need to be prepared under the federal *Impact Assessment Act* (IAA; 2019) or the provincial *Environmental Assessment Act* (1990). These assessment processes apply to many municipal transportation and infrastructure projects. An EIS is not usually required by the City of Ottawa if a higher level environmental assessment is prepared, provided that the minimum requirements outlined in this guideline are met. In some cases, however, the environmental assessment may recommend that an EIS be completed at a later stage of planning, e.g., to inform the detailed design of a project.

Many City parks include or are located adjacent to natural heritage features. Provided that best management practices are followed, an environmental impact study is not required within existing parks for the improvement, renewal and operation of current or new park facilities and amenities, outside of natural heritage features.

1.3. Scope of the EIS

Because the environmental issues and constraints will vary for each proposed project based on the type of project and the natural context of the site, so will the level of study. The breadth and depth of study is referred to as the "scope" of the EIS. City staff and the applicant will determine the preliminary scope of the EIS after reviewing the available information, as part of the first step in the EIS process (see Section 2.1 below). There are two general types of EIS:

a) ***Detailed (major) impact studies***: These assess the effects of large-scale projects, such as plans of subdivision or quarry/pit applications, or projects that are likely to

affect significant or sensitive natural features. The larger scale of these developments and/or the greater potential for impacts requires collection and analysis of a larger amount of information.

b) ***Minor impact studies***: These assess potential impacts of smaller projects such as single-lot severances. They involve completing the Minor EIS Form (Appendix 1) to address impacts. This type of study may also be appropriate for other types of projects where staff consider the potential for impacts is low and more detailed and recent studies exist that can be leveraged.

In determining the scope of the EIS and the requirements for field studies, the applicant and the City will have regard for the basic principle of the EIS guidelines:

> The EIS must demonstrate how the proposed development or site alteration will satisfy the requirements of the Official Plan with respect to protection of the Natural Heritage System, natural heritage features, and their ecological functions.

The Official Plan establishes varying thresholds for the evaluation of impacts on the NHS and natural heritage features. More information on the interpretation and application of these thresholds appears in Section 3.4.1 below.

Where a detailed or minor EIS requires a wildland fire assessment, the study must meet the requirements of the Province's Wildland Fire Risk Assessment and Mitigation Reference Manual (MNRF, 2017).

1.4. Who prepares an EIS?

The scale of the proposed project and the type of natural features and functions affected will determine the level of expertise required. Most applicants hire an environmental consultant to conduct the EIS on their behalf. Detailed EIS reports for larger projects such as subdivisions or quarries may require input by a team of consultants from several disciplines. For a Minor EIS where the project will occur adjacent to, rather than within, the triggering natural feature, the applicant may be able to complete the Minor EIS Form with input from agency staff (see Appendix 3 for agency contacts). City staff and the applicant will determine the preliminary qualifications required for completion of the EIS during pre-consultation (see Section 2.1 below). These qualifications will be relevant to the scope of work. For example:

- If the boundaries of a provincially significant wetland (PSW) require confirmation, or a wetland evaluation is needed, then the assessor will have to be certified as a wetland evaluator by the MNRF;
- If Ecological Land Classification (ELC) is required, then the assessor will be expected to have completed training in this method; and,
- If a Wildland Fire Assessment is required, then the assessor must be a Registered Professional Forester.

The City maintains a list of consultants who offer EIS or related services, which will be provided to applicants upon request. Consultants wishing to be included on this list must be familiar with the City's EIS Guidelines and must provide their professional contact information to the City. Inclusion on the list is voluntary and does not imply any endorsement by the City of the listed consultants. Each professional contributing to an EIS must demonstrate

qualifications relevant to the scope of the assessment by submitting their resume with the final EIS report.

1.5. Integrating with the Development Process

Some requirements of the EIS may overlap with requirements of other development studies (e.g., tree conservation reports, groundwater studies, stormwater management reports) and regulations (e.g., *Conservation Authorities Act, Aggregate Resources Act, Endangered Species Act 2007*). These may be administered by other City departments or external agencies such as the local Conservation Authorities, the Ministry of Natural Resources and Forestry (MNRF), or the Ministry of Environment, Conservation and Parks (MECP). Consultants should co-ordinate the study requirements to avoid duplication, and also to ensure that any on-site investigations are scheduled appropriately (see Section 2.2 for more information on field study timing). It is the applicant's responsibility to ensure the requirements of all studies are met, and that the EIS integrates the results of other studies into the analysis of environmental impacts (see Section 3.4 below).

A Tree Conservation Report (TCR) is required in support of all applications for subdivision, condominiums affecting vegetation cover on site, or site plan approval. The Tree Conservation Report Guidelines contained within Schedule E of the Tree Protection By-law apply to all TCRs prepared in the City (urban or rural). In cases where a TCR and an EIS are both required, the TCR elements may be incorporated into the EIS so that only one report (the EIS) is submitted. The requirements of the TCR Guidelines must be met by the EIS in these cases. The TCR Guidelines are available on the City's website at: Tree Protection (By-law No. 2020-340) | City of Ottawa

2. The EIS Process

The steps outlined in the following sections provide a general outline of the EIS process. Emphasis is placed on **early consultation** with the City and other review agencies such as the local Conservation Authority, the MECP and/or the MNRF. This helps to improve communication, identify issues and constraints at an early stage, avoid costly delays, and make efficient use of time and resources. On-going dialogue and reporting is expected throughout the process.

2.1. Step 1: Pre-consultation, Scoping and Terms of Reference

Pre-application consultation, or pre-consultation, is a required step in the development review process for most major applications, and is encouraged for all applications. From the EIS perspective, the aim of pre-consultation is to:

a) Screen proposed projects to determine the type of EIS required, if any; and,
b) Identify preliminary ecological constraints and other issues requiring assessment.

A pre-consultation meeting for an EIS will include the City's planning staff (specifically, an environmental planner), other review agency staff where appropriate, and the applicant. If the applicant has already retained a consultant to complete the EIS, then the consultant should also be included in this meeting. City staff and the applicant will complete the EIS Decision Tool (Appendix 2) during pre-consultation to assist in the determination of whether an EIS is

required, and if so, the type and preliminary scope of the EIS (i.e., the breadth and depth of study required). The preliminary scope of the EIS will depend on the following:

- The scale and nature of the proposed development or site alteration;
- The character of the natural environment and its associated ecological functions;
- The site's setting within the landscape and/or watershed; and,
- The availability of previous studies and information.

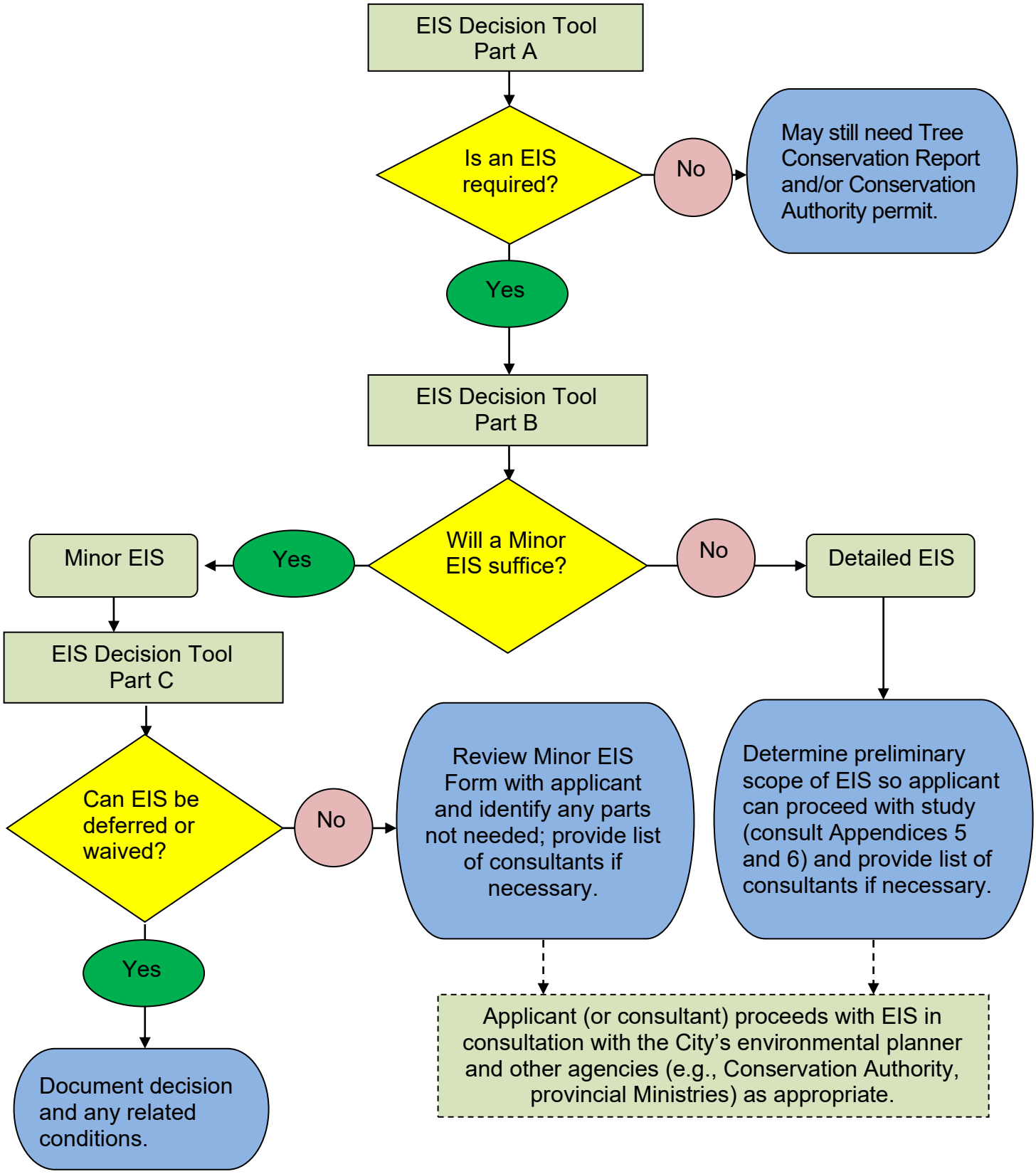
In some cases, City staff may determine that the requirement for a Minor EIS should be deferred to a later date or that completion of the Minor EIS Form is unnecessary if the risk of impacts is low. The staff review of the proposal and site will constitute the EIS in the latter case. The EIS Decision Tool, Part C, provides guidance on when deferral or waiving of the Minor EIS Form is appropriate. Staff should ideally have direct personal knowledge of the site in order to make this determination. However, conversations with other City or agency staff who have such knowledge, or the use of available mapping and imagery such as geoOttawa may suffice. All such decisions to defer or waive the completion of the Minor EIS Form will be documented in the pre-consultation meeting notes or in subsequent written correspondence with the applicant, with the rationale for the decision. These decisions are to be made on a case-by-case basis and cannot be automatically extended to other projects proposed in the same area, or on the same site. Staff may specify conditions under which the exemption applies, such as requiring standard mitigation measures and may also set a time limit on the exemption, after which the applicant would need to re-confirm the EIS requirements before proceeding with the project. Any such conditions or time limits will also be documented in writing and will be retained on file by City staff.

A schematic illustration of this EIS decision-making process, with reference to the EIS Decision Tool in Appendix 2, is presented in Figure 1.

A list of agency contacts and existing information sources will be provided to applicants at the pre-consultation meeting (see Appendices 3 and 4). A list of consultants willing to conduct an EIS will also be provided upon request.

The EIS must address, at minimum, the values and ecological functions for which the triggering lands or features were identified. Appendix 5 outlines the general values and functions associated with each of the natural heritage features identified as an EIS trigger in the Official Plan, at a coarse level, along with standards for evaluation where available. This information is intended to provide a consistent basis of evaluation for use in all EIS reports, but it is only a minimum standard. The specific, detailed values and functions for any particular natural heritage feature must be determined on a case-by-case basis during the course of each EIS study. For example, an EIS that is triggered by the presence of a significant wetland must assess the potential impacts of the project on the specific values and functions that were documented as part of the official wetland evaluation record, to determine whether the project could negatively impact the wetland's status. This does not mean that other values and functions that may happen to be discovered through the EIS can or should be ignored; they must also be described, assessed, and included in the report. Information that corrects or updates the documented condition, values and functions of a feature may be critical to the impact assessment and decision-making process and should always be included in the EIS.

FIGURE 1: ENVIRONMENTAL IMPACT STUDY DECISION-MAKING
DURING PRE-APPLICATION CONSULTATION



Some specific study requirements for the EIS, such as breeding bird surveys or field investigations of potential species at risk and their habitats, may be identified and agreed upon during pre-consultation, based upon the known natural heritage features and ecological functions that could be affected by the proposed project. These requirements will be documented in the meeting notes, using the Preliminary Environmental Data Collection Checklist found in Appendix 6. This checklist, once completed, will identify specific topics or issues that the EIS must address, as well as any specific field study requirements (e.g., timing or methodology of study). The checklist is intended to provide a preliminary overview of the EIS requirements only, since these requirements may need to be revised during preparation of the EIS if additional natural heritage features or ecological functions are discovered.

The requirement for a wildland fire assessment will be determined at the pre-consultation meeting, based upon available information. This requirement may be revisited if extreme or high-risk forest types are discovered on site during field investigations.

The applicant is responsible for working with the City and other review agency staff to determine the final scope of the EIS during the development pre-application process. In certain cases, where the size and the potential impacts of a project warrant, the City may require the applicant to prepare and submit for approval a “Terms of Reference” for a Detailed EIS, to further specify the scope or other aspects of the study. The scope will not be considered final until the background information review and field study components have been substantially completed, to allow for any necessary revisions based on new information discovered as part of the EIS.

2.2. Step 2: Information Gathering and Report Preparation

Once the preliminary scope of the EIS has been determined, the assessor can proceed to gather information from available background sources and/or original field studies, confirm the scope of the EIS with the City, conduct the impact assessment and report on the study findings. While the basic components of an EIS report are identified in these guidelines, the contents of the report will differ, depending on the outcome of the scoping exercise. For more information on the required contents of an EIS report, refer to Section 3 below.

For a Minor EIS, the amount of information required is significantly less than the requirements for a Detailed EIS. If it is determined during pre-consultation that a Minor EIS is required, applicants or their consultants must complete and submit the Minor EIS Form found in Appendix 1. Depending upon site conditions, City staff may waive the requirement to complete certain sections of this form.

A Detailed EIS requires a more comprehensive report, containing all of the elements described in these EIS Guidelines. A Detailed EIS must include a review of any land use planning documents, such as subwatershed studies, secondary plans or environmental management plans, for policies or guidelines that may be applicable to the development application. It must also consider the impacts of climate change using data from the Climate Projections for the National Capital Region report (Climate Resiliency | City of Ottawa), as well as relevant climate risk assessments and adaptation strategies. The EIS report and the development application will be assessed against any such planning documents.

Specifications for field investigations are provided in Section 3. At least one site visit is required for every EIS, regardless of the scope. An EIS prepared without direct, personal

observations of the site will be considered incomplete. That site visit will occur during the growing season rather than in winter, when snow cover and normal seasonal dormancy severely limit potential observations. In cases where multiple site visits are required to provide an adequate understanding of the existing conditions, winter visits may be included as part of a multi-season field program. Winter site visits are useful for tracking surveys, investigating seasonal wildlife habitat (e.g., deer yards) or locating heronries and raptor nests, which are more easily seen when the trees are bare of leaves.

The initial site visit for the EIS should occur prior to any clearing of natural vegetation or intrusive site investigations (e.g., installation of test wells or boreholes). If any potential areas of constraint are identified where intrusive surveys could result in negative impacts on significant natural features or ecological functions, recommendations to avoid or minimize these impacts will be required. In urban areas regulated by the City's Tree Protection By-law, this can be accomplished through the preparation of a preliminary tree conservation report, which is required to support early servicing or other pre-application on-site work. In the rural area, the use of a similar preliminary report is strongly encouraged, to reduce the potential environmental impacts.

Where pre-consultation has established the requirement for a wildland fire assessment, the initial site visit will attempt to confirm the presence of high or extreme risk forest types. If the site visit confirms that no such forest types are present within 100 metres of the proposed development, then further assessment and mitigation is not required. If information is lacking or the site visit suggests that high or extreme risk forest types may be present, then the study will be carried forward as part of the EIS.

Ongoing dialogue between applicants, their consultants and City staff is expected during the completion of the EIS. Concerns or questions may be raised with staff at any time. Recommended points of contact with City staff include:

- Following the background information review and field study, to confirm the scope of the EIS and discuss any environmental constraints identified; and,
- During the impact assessment, to discuss potential impacts, options for mitigation or compensation, and possible monitoring requirements.

In some cases, it may be beneficial to hold such discussions at the site, with other agency staff included where appropriate.

2.3. Step 3: Submission and Review of the EIS Report

The EIS report is submitted to the City as part of the development application process. If the report is not complete or the content is insufficient, it will be returned to the proponent or consultant for modification. The EIS and other supporting technical reports must be completed before the application can be deemed complete.

While a Minor EIS may be submitted in hard copy only, electronic (PDF) copies are encouraged. Detailed EIS reports should be submitted in both hard copy and electronic format (PDF and Word, when requested) to facilitate the review process. The City planner for the application file will specify the numbers of hard copies and format of the electronic submission required at the pre-consultation stage. Applicants should be aware that the EIS, along with

other supporting materials, may be posted on the City's website as part of the public consultation process where required.

City staff will evaluate the EIS on its methods, analysis, recommendations and conclusions. Reviewers must be satisfied that the findings, recommendations and conclusions of the EIS and the proposed development are consistent with the policies of the Official Plan and the PPS. Reviewers will also assess which recommendations can reasonably be monitored and verified.

Staff from the MNRF may be asked to provide advice regarding the application of provincial guidelines when significant wetlands, significant areas of natural and scientific interest (ANSIs) and/or significant wildlife habitat are addressed. The MNRF must be informed of the outcome of any wetland evaluation conducted as part of an EIS, and must approve any reported changes to the boundaries or status of significant ANSIs. Similarly, MECP staff may be asked to provide input during the review of an EIS addressing endangered or threatened species and their habitat. Conservation Authority staff may be consulted on natural hazards or other matters under their jurisdiction.

Staff may need to undertake one or more site visits during the review of an EIS, in order to gain a better understanding of the environmental context of the proposed project or to verify the findings of the EIS. Staff will notify the applicant prior to any proposed site visits, to arrange for access to the property. They may also contact the applicant's EIS consultant to arrange for a joint visit where on-site discussions would be useful.

Based upon the results of the review, an EIS report may be accepted as written, or it may require revision to address comments and concerns raised by the reviewers or changes to the proposed project arising during the application review process. The resolution of comments or concerns may be achieved through discussions or meetings. It may require additional research or field investigations, with subsequent revision of the report. Open, ongoing communications between the assessor and the City during the preparation of the EIS should significantly reduce the likelihood of substantial revisions being required.

In some cases, the City may determine that an independent peer review of the EIS is required. This may apply when there is an unusually high level of public concern and/or environmental sensitivity involved, or when there is a significant unresolved difference of opinion between the applicant's consultant and the agency reviewers. In these cases, the City will arrange for the services of a peer reviewer (either a private consultant or an outside agency).

2.4. Step 4: Finalization of the EIS Report

Recommendations in the final EIS report will be incorporated into conditions of approval between the City and the applicant. A security (i.e., financial deposit or bond) may be required at this time and incorporated into the agreement to ensure adherence to the conditions of approval.

2.5. Step 5: Post-Approval Revisions and Updates

Revisions to proposed projects and the associated technical documents are often required during the development review process. The implications of such revisions for an EIS have already been addressed in the preceding sections. Even after an application has been draft approved, however, significant changes may still occur between the time of approval and the

time of registration (or of actual construction). This is particularly prevalent in cases where large-scale projects such as subdivisions are being developed in phases over the course of several years, or where a draft-approved project is not implemented promptly. In the interim, changes may be made to the development plans, or to the legislation and policies that apply. When such changes occur, it is appropriate to revisit the EIS to ensure that its findings and recommendations are still valid prior to allowing the project to proceed further in the approval process.

Ottawa City Council supported this approach to phased subdivisions when the EIS Guidelines were first approved in July 2010. Council directed that where a project is proceeding in phases, the EIS shall be updated as necessary prior to registration of each phase. This ensures that the EIS reflects the final plan as approved and addresses any changes to the anticipated impacts and recommended mitigation measures that may be required as a result of changes to the draft plan, or changes in the known environmental context of the site. A condition of draft approval for subdivisions has been prepared to implement Council's direction on this issue.

A similar approach will be followed where a project has not proceeded promptly after draft approval (e.g., an extension of draft plan approval is required) or where subsequent planning approvals are necessary to implement the project (e.g., Zoning By-law amendments or site plan applications that follow a draft plan of subdivision or an approved consent). Staff will identify the need to update a previously accepted EIS under these circumstances at the time of pre-consultation.

The City's environmental planner will determine whether an EIS needs to be updated based on changes occurring to the proposed plan or its environmental context, in consultation with the lead planner for the project file. If no such changes have occurred, or if the changes are not relevant to the EIS, then the environmental planner can clear the draft condition, with a note to the file documenting the rationale for this decision. Where the environmental planner believes that the changes could warrant revisions to the EIS, the proponent (or their consultant) will need to ensure that the findings and recommendations of the EIS are updated as necessary, to the City's satisfaction prior to registration. The process for updating an EIS shall include, but not be limited to, the following:

- A review of the current list of species at risk in Ottawa and the associated regulatory lists at the provincial and national level, in comparison with the species list for the site compiled as part of the EIS and the most recent species occurrence data available from sources such as the Natural Heritage Information Centre. The purpose of this review is to ensure that any species at risk either added to the regulations or discovered in the vicinity of the site since the submission of the original EIS are not overlooked;
- Re-assessment of the anticipated impacts, based on the final plan and on any new information or additional details about the proposed development that may be available; and,
- Confirmation that the significant features and ecological functions are protected from negative impacts, with any necessary adjustments to the recommended mitigation measures to reflect changes in the draft plan, or recommendation of additional mitigation measures if warranted.

In cases where the EIS needs to be updated, an addendum to the original report will be required to describe the timing and methodology of the review, the issues identified, and the

revisions recommended to address these issues. This addendum shall be incorporated into the original report, i.e., bound with the hard copies and/or integrated into a single PDF file, to reduce the possibility of the addendum becoming lost or separated from the parent document. If no changes are needed, then a brief letter will suffice to outline the timing and methodology of the review, and the consultant's professional opinion that the original EIS report does not require revision.

3. Contents of the EIS Report

The contents of an EIS are outlined below. The appropriate level of detail required will vary depending on the type of EIS (Minor or Detailed). Detailed EIS reports should follow the same basic structure outlined below, unless the scoping exercise during pre-consultation has determined that some sections are not required. Incomplete or incorrect information may delay the development review process.

Always cite the sources of information used in preparing the maps, figures and written descriptions. Detailed EIS reports should include a complete reference list and list of agency contacts as appendices. A contact list of partnering agencies that may be able to provide relevant information for the EIS is found in Appendix 3.

The City maintains digital environmental mapping and information which should be utilized and consulted in the preparation of EIS reports. Much of this information can be previewed on the City's interactive mapping application, geoOttawa. Information from these and other background sources should always be ground-truthed through site investigations as part of the EIS. For further information on available data and procedures for data requests, see Appendix 4.

3.1. Property Information

Basic information on the property must be included at the beginning of the report. This includes:

- Owner's name;
- Location of the property (municipal address, lot and concession numbers and geographic township, Property Identification Number(s));
- Current planning designation and zoning, including overlays; and,
- Existing and historic land uses.

The current planning designation(s) for the property may be provided by City staff during the pre-consultation, or it may be determined by the applicant using the Official Plan, which can be obtained from any City of Ottawa Client Service Centre or on the City's website.

Land-use designations are shown on Schedule B of the Official Plan. The Natural Heritage overlays and Urban Greenspace network are shown on Schedules C11 and C12. Printed copies of the Official Plan may not always include recent Official Plan amendments, and any land use information obtained from a printed copy should be confirmed through the City's website, by a Development Information Officer, or at the pre-consultation meeting.

The zoning for the property may be provided by City staff during the pre-consultation, or it may be determined by the applicant using geoOttawa.

Applicants should also consult with staff to determine whether the property has been included in any area-specific planning studies such as a secondary plan, subwatershed plan, environmental management plan or community design plan.

3.2. Description of the Site and the Natural Environment

The description of the subject site and its environmental context provides the basis for the assessment of impacts to follow. This description must include the lands adjacent to the site, not just the site itself. The level of detail required will vary based on the type of EIS; in all cases, however, it is recognized that lack of access to adjacent lands may result in less detailed information. For a Detailed EIS, the description should include a brief introductory overview that establishes the environmental setting for the proposed project relative to any known natural heritage features on or adjacent to the site, followed by more detailed discussions of the various environmental components as outlined in Sections 3.2.2 through 3.2.6 below. A map that clearly illustrates the key features associated with the site will be required to accompany every EIS. See Section 3.2.1 below for more details. The use of photographs to illustrate and accompany the EIS is also encouraged.

The EIS must provide a descriptive summary of each natural heritage feature known to be present on, or adjacent to, the site. This may require information in agency documents: e.g., Natural Environment Systems Strategy (NESS) reports or Urban Natural Areas Environmental Evaluation Study (UNAEES) reports available from the City. See Table 1 below for guidance on which agency to contact for background information. **The summary must:**

- Discuss the value(s) assigned to the feature;
- Clearly identify aspects of the feature that contribute to its significance;
- Assess the sensitivity of the feature to the proposed development; and,
- Consider the potential implications of climate change on the feature and its value(s) and what that means for the proposed development.

Refer to Appendix 5 for information on the basic values and functions associated with each type of natural heritage feature. **This information is critical to the assessment of impacts.** EIS reports that fail to present clearly this information will be considered incomplete.

Table 1 Guide to Information Sources on Environmental Features

Feature	Official Plan Section(s)	Source(s) of Background Information
Natural heritage system, including cores and linkages	4.8.1 and 5.6.4; Schedule C11	City of Ottawa
Significant Wetlands	7.3; Schedules C11, C12	MNRF, Natural Heritage Information Centre (NHIC), City of Ottawa
Natural Environment Areas	7.3; Schedule C11	City of Ottawa
Urban Natural Features	7.3; Schedule C12	City of Ottawa
Areas of Natural and Scientific Interest (Earth or	4.8.1	MNRF, NHIC

Feature	Official Plan Section(s)	Source(s) of Background Information
Life Science)		
Habitat of endangered and threatened species	4.8.1	MECP, NHIC (occurrence data)
Significant woodlands	4.8.1	City of Ottawa
Significant valleylands	4.8.1	City of Ottawa
Significant wildlife habitat	4.8.1	City of Ottawa, MNRF (see MNRF Technical Guidelines and Ecoregional criteria)
Surface and groundwater features	4.8.1, 4.9	Conservation Authority, City of Ottawa
Fish habitat	4.8.1, 4.9	Fisheries and Oceans Canada, MNRF, Conservation Authority, City of Ottawa
Landform features	4.8.1	City of Ottawa
Forest types of high or extreme wildland fire risk.	10.1.5	Provincial Wildland Fire Hazard Mapping (geoOttawa / Land Information Ontario), Ontario Wildland Fire Assessment and Mitigation Reference Manual

Climate change implications should be based on data from the Climate Projections for the National Capital Region report, which is available online at Climate Resiliency | City of Ottawa as well as relevant climate risk assessments and adaptation strategies.

Depending on the location of the site, City staff may be able to provide background information and/or mapping from the following resources:

- Watershed and subwatershed studies;
- Environmental management plans;
- Geographic Information Systems data layers (see Appendix 4);
- NESS area summary reports, 1997;
- UNAEES summary reports, 2006;
- Environmental assessments for infrastructure (e.g., from recent pipeline or transportation projects); and/or,
- Other EIS reports, e.g., for recent subdivisions in the area.

The City may be able to provide some information on ANSIs, significant wildlife habitat, and species at risk occurrences. However, this information may not be complete and must be confirmed by provincial staff. Similarly, while the City may have information on flood plains and other regulatory limits associated with wetlands and watercourses, this information should be confirmed with the appropriate local Conservation Authority. Information on fish and fish habitat has historically been collected by a variety of agencies including the City, the Conservation Authorities, the Province and the federal department of Fisheries and Oceans.

In many cases, the City's information will be limited because fieldwork has not previously been completed on private land. This may result in significant features remaining undiscovered until an EIS is conducted. For example, a significant woodland may contain additional significant features such as habitat for species at risk not indicated in an existing assessment. Any previously unreported features that meet the City's definition of a natural heritage feature must be identified and addressed in the EIS. The discovery of any such unreported features must be promptly reported to City staff so that any necessary changes to the scope of the EIS can be determined in a timely fashion.

Field confirmation of boundaries (e.g., for provincially significant wetlands, significant ANSIs or significant woodlands) will be required, and any proposed changes will require agency approval. Field studies for the EIS will also confirm and/or update the available background information. Details on data collection and reporting standards for field inventories that may be required as part of a Detailed EIS are outlined in Appendix 7. Site characteristics of areas considered by the City to be significant woodlands and significant wildlife habitat must be confirmed during field studies for the EIS in accordance with the City's significant woodlands guidelines and Appendix 8, respectively. Thorough searches in the appropriate season, time of day, and habitat must occur for any species at risk reported at or near the site in question. The EIS report must include a fieldwork summary table including date and time of all site visits, personnel involved, weather conditions, and purpose of each visit.

In addition to the identification and assessment of natural features associated with the property, the EIS must also address the ecological *functions* that may be affected by development. Ecological functions are defined in the PPS as:

> *"…the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes. These may include biological, physical and socio-economic interactions."*

For example, natural areas may provide wildlife habitat, allow groundwater infiltration or discharge, prevent erosion, control stormwater, or filter pollutants. Natural features are also instrumental in building resiliency to changing climate conditions, by mitigating the effects of urban heat islands for example, or providing corridors that enable species to migrate as habitats change. In some cases, these ecological functions may not be restricted to a single, visible natural feature. This makes the long-term health and viability of natural functions more difficult to assess and preserve.

The EIS must specifically discuss the nature and extent of the ecological functions provided by the site, in relationship to the surrounding area. The EIS must include:

- A description of ecological functions provided by the site and identification of any functions that have contributed to the area being identified as significant;
- An assessment of the significance of the function, using quantitative information if possible, and relating this to the quality and integrity of the area;
- An assessment of the sensitivity of the function to the type of development proposed; and,
- An assessment of the potential impacts of climate change on the site in the future (post-development).

For significant woodlands in the urban area, this consideration of ecological functions should focus on the ecosystem services identified in the City's guidelines.

The EIS must identify and describe any forest types associated with a high or extreme wildland fire hazard within 100 metres of the project. Any such forest types must be assessed for risk according to the provincial Wildland Fire Risk Assessment and Mitigation Reference Manual (MNRF, 2017). If the EIS concludes that a hazardous forest type does not pose a risk to the development, then the description must provide all necessary information to support that conclusion, such as a detailed stand inventory, maturity, or past management actions.

Again, this information is critical to the assessment of impacts, and reports without this information will be considered incomplete.

3.2.1. General Map of the Natural Environment

A general map of the natural environment will always be required. It should include a key map to show the subject site's location in relation to the surrounding major roads and other landmarks. The use of recent aerial photography as a base for the natural environment map is strongly encouraged.

Any map prepared by a professional consultant should be submitted as both a printed and electronic document. The electronic map should be submitted in a format compatible with ArcGIS, and it should include all supporting data files (i.e., shapefiles, projection files, coverages) as well as a PDF version. The standard City of Ottawa projection is NAD83 3 degree Modified Transverse Mercator. The City can provide the projection file if requested.

The map will:

- Illustrate the existing natural environment on the site (note: the property line must be clearly identified) and in the surrounding area;
- Be drawn to scale, with standard mapping elements such as a scale bar, north arrow, date, and legend;
- Identify all of the terrestrial and aquatic natural features, natural ecosystems and vegetation communities on the site;
- Identify any forest communities associated with a high or extreme wildland fire hazard;
- Identify all of the terrestrial and aquatic natural features, natural ecosystems and vegetation communities in the surrounding area that might be affected by the proposed development or site alteration;
- Identify the feature[s] that triggered the requirement for an EIS; and,
- Include topographic information (i.e., elevation contours) at a level of detail sufficient to show general slope trends and specific topographic features such as valleys or gullies, cliffs or escarpments, hills, post-glacial features (e.g., drumlins, eskers, kettles), etc.

In cases where the EIS will also function as a TCR, the requirements established by the Tree Conservation Report Guidelines for Map #1 – Current Vegetation must be met.

3.2.2. Landforms, Soils and Geology

A brief description of the physical characteristics of the site is always relevant: e.g., “the property is primarily flat with deep, heavy clay soils,” or “the property is located in the Carp Hills and has shallow soils with frequent rock outcrops.” In many cases, more detailed information on soils and geology will be required. The need for this information will be determined through pre-consultation and the EIS scoping checklist. In general, a description of the soils and geology on the development site and in the affected surrounding area will be required for any EIS in which the environmental values or functions of the feature[s] or designation[s] that triggered the EIS may be dependent upon or sensitive to the potential effects of the project on landform features, soils or geological conditions.

Some examples where a description of soils and geology would be required include (but are not limited to) development or site alteration:

- Adjacent to a significant wetland;
- Within or adjacent to a significant valleyland;
- On or adjacent to an escarpment;
- Within or adjacent to an Earth Science ANSI;
- In or adjacent to unstable slopes or areas of organic soils as indicated on Schedule C15; or,
- Within the recharge or discharge area of a sensitive groundwater feature.

Detailed information will also be required in areas where there are natural vegetation communities or specialized plant or animal species that depend upon certain site conditions, such as:

- Shallow bedrock (e.g., alvars or rock barrens);
- Organic soils (e.g., wetlands); or,
- Well-drained (i.e., highly permeable) glacio-fluvial or glacio-lacustrine soils, such as those on sand and gravel.

Maps showing soils, surficial geology and bedrock geology for the Ottawa area are available from Natural Resources Canada; this information is also available in digital format from the City. Site-specific studies conducted in support of development applications, such as geotechnical studies and/or slope stability analyses, should be referenced when available.

Soils: A brief description of soils on the site and surrounding area, based on available information, is expected. If additional site-specific information is required, this background data should be supplemented with further soil characterization resulting from Ecological Land Classification field studies or other investigations (e.g., geotechnical studies). Where relevant, shallow and/or poorly drained soils should be indicated.

Surficial geology: Any local landforms should be identified (see Appendix 4). Site-specific information may be available from terrain studies and analyses completed previously, such as boreholes.

Bedrock geology: Any relevant aspects of bedrock formations may be described.

The significance and characteristics of any earth science features, such as significant valleylands, Earth Science ANSIs, and landforms, must be described in detail in this section.

3.2.3. Surface Water, Groundwater and Fish Habitat

The Provincial Policy Statement recognizes that natural heritage systems are interconnected with and supported by water resource systems. Surface water and groundwater features often connect and contribute to the significance of other natural heritage features and functions. Ottawa's Official Plan includes surface water and groundwater features as natural heritage features and establishes policies for their protection during development and site alteration.

While a detailed assessment of surface water, groundwater and fish habitat may not be required for every EIS, the following information must be described and mapped in the EIS:

- Surface water features as defined in the Official Plan, including natural watercourses and waterbodies, legally defined drains, headwater drainage features and wetlands, showing the local drainage pattern;
- Confirmation of the boundaries of any evaluated wetlands on or adjacent to the site, highlighting any observed discrepancies with current background information;
- Areas of erosion;
- Culverts, dikes, weirs and dams;
- Locations of seeps, springs, sinkholes, and other groundwater discharge/recharge areas; and,
- Locations and usage of wells on the site and surrounding area.

Much of this information is available in digital format from the City, but it should be verified and augmented, where necessary, during fieldwork.

Background information may be available in area planning studies, such as source water protection plans, watershed or subwatershed studies, and environmental management plans. It may also be available in servicing reports, such as stormwater management plans, hydrogeological and terrain analyses, water budget assessments, or wellhead protection studies. The appropriate Conservation Authority must be consulted to obtain available information and to determine whether a permit is required under the *Conservation Authorities Act*. If so, the applicant should ensure that the EIS will also meet the Conservation Authority's requirements, to facilitate the review process.

Detailed assessments of surface water and/or groundwater conditions will be required when the proposed development or site alteration could impact surface water or groundwater features, particularly in cases where those features may support other natural features and their ecological values or functions. Examples where detailed descriptions would be required include, but are not limited to:

- Projects adjacent to provincially significant wetlands;
- Projects within or adjacent to significant valleylands;

- Projects that might affect surface water features, including unevaluated or non-provincially significant wetlands and headwater drainage features, or that propose a reduction in the minimum setback to such features;
- Projects that might affect natural vegetation communities or plant and wildlife species dependent upon groundwater discharge (i.e., significant wildlife habitat); and,
- Projects that might affect natural vegetation communities or plant and wildlife species dependent upon permanent or seasonal surface water supply.

If the need for a detailed assessment of water features is identified, then a detailed description of the soils and geology of the site will also be required, to adequately inform the assessment of potential impacts from erosion, sedimentation and changes in local hydrogeology.

Any provincially significant wetlands on or adjacent to the subject property must be addressed in the EIS and shown on the map of the natural environment. Provincially significant wetland mapping is available online from the NHIC, and this mapping has been incorporated into the Official Plan and Zoning By-law. Changes to the Ontario Wetland Evaluation System (OWES) made by the Province in December 2022 may trigger the re-mapping and re-evaluation of some significant wetlands. Furthermore, wetlands are dynamic features whose boundaries may change over time.

Under the policies of the Official Plan, the City may initiate or require a wetland evaluation if it is recommended in a planning study, such as a watershed study, subwatershed study, environmental management plan, secondary plan, environmental impact study, or an environmental assessment. Consultants who are conducting an EIS involving an unevaluated wetland should therefore consider, in consultation with City staff, whether a wetland evaluation is warranted to ensure that potentially significant wetlands are not negatively impacted. A wetland evaluation should be undertaken in cases where a wetland may qualify as significant and would be negatively impacted by the proposed development. This determination should be made as early in the EIS process as possible. Evaluation may not be necessary where staff agree that the wetland will clearly not be impacted by the proposed development or site alteration.

Any wetland evaluation, re-evaluation, or re-mapping of a significant wetland must be conducted by a qualified wetland evaluator using the MNRF's Ontario Wetland Evaluation System (Southern version). It must be submitted to the City for review and approval prior to submission of the mapping to the MNRF.

Significant wetlands and some other wetlands are regulated by the local Conservation Authorities under the *Conservation Authorities Act*. Applicants are required to consult with the appropriate Conservation Authority prior to commencing an EIS involving wetlands, to ensure that the study will meet their requirements. Applicants should also be aware that the *Conservation Authorities Act* defines "development" more broadly than the *Planning Act*. It would therefore be prudent to consult with the local Conservation Authority regarding potential permit requirements for any proposed project involving wetlands, even if no *Planning Act* approval is required.

If not already completed as part of other studies, the following in-depth field studies may be required under Official Plan policies relating to flood plains, surface water features minimum setbacks and groundwater features (Sections 10.1.1, 4.9.3 and 4.9.4, respectively):

- Flood plain mapping;
- Geomorphological assessment of watercourses, to determine appropriate meander belt width and other channel characteristics;
- Headwater drainage features assessment
- Flow monitoring;
- Borehole installation to determine groundwater elevation and direction of flow (must be completed by a qualified engineer or geologist); and/or,
- Investigation of connections between groundwater and surface water features.

The relevant findings of any of these studies or other hydrologic or hydrogeological assessments must be summarized in the Detailed EIS, especially with respect to constraints and potential environmental impacts. The scope of such assessments must include sufficient detail to define the relationship between groundwater and surface water features (i.e., hydrologic function). These assessments must factor in future climate conditions.

The Department of Fisheries and Oceans Canada (DFO) has established a screening process, best practices and other guidance regarding projects that may affect fish and fish habitat. Like other sections, the scope of the aquatic component of the EIS will be established during the pre-consultation stage. Assessments of fish habitat must follow the DFO guidance. Assessments of benthic macroinvertebrate communities, if required, must follow the Ontario Stream Assessment Protocol (OSAP) and/or the Ontario Benthos Biomonitoring Network protocol.

Recommended sources of background information on fish and benthic macroinvertebrate communities include:

- Watershed /subwatershed studies or environmental management plans, where available;
- Past sampling records from the City's Water Environment Protection Program, the local Conservation Authority, or the MNRF, where available;
- Other ecological inventories, where available, such as City Stream Watch assessments and wetland evaluation reports;
- Fishes of Canada's National Capital Region, by Brian Coad (http://www.briancoad.com/main.asp?page=title%20pageNCR.htm)
- Database records from the NHIC (Get natural heritage information | Ontario.ca);
- Online resources such as iNaturalist;
- Ontario Odonata Atlas (2005);
- Local field naturalists' reports and journal articles (e.g., *The Canadian Field-Naturalist*, *Trail and Landscape*, etc.); and,
- Local scientists, naturalists, anglers and residents.

3.2.4. Vegetation Cover

A description of the vegetation communities, including dominant species of trees, shrubs and/or groundcover for each community on the subject site and in the affected surrounding area is required for all EIS reports. Each of the vegetation communities described must be clearly identified on the map of the natural environment. A detailed plant species list for the property is not required in every case. The level of detail required will vary with the size and complexity of the proposed project and the amount of natural vegetation that may be affected. The vegetation communities identified should be consistent with the provincial Ecological Land Classification (ELC) for Southern Ontario. ELC mapping will be required for all Detailed EIS reports.

The EIS must confirm or refute the presence of any significant woodlands on or adjacent to the subject property, using the City's guidelines for the identification and assessment of significant woodlands. The City has mapped significant woodlands in the urban and rural areas using available information and incorporated these woodlands into the Natural Heritage Overlays (Schedule C11). Additional significant woodlands may be identified during an EIS on the basis of site-specific investigations, particularly in the rural area.

The EIS must identify any forest types associated with a high or extreme wildland fire hazard within 100 m of the project. If present, these communities must be described in sufficient detail to allow a risk assessment in accordance with the provincial Wildland Fire Risk Assessment and Mitigation Reference Manual.

Vegetation communities that are classified as provincially rare by the NHIC (e.g., alvars, sand barrens, cliff or talus slope communities) are considered significant wildlife habitat under the MNRF's Significant Wildlife Habitat Technical Guide (2000) and in the City of Ottawa (see Appendix 8). The presence of any such communities on or adjacent to the subject property must be addressed in the EIS.

For a Detailed EIS, a thorough desktop review of existing studies and data, which has been ground-truthed through fieldwork, is the minimum standard expected. Sources of information for this review may include but are not limited to:

- Watershed /subwatershed studies or environmental management plans (where available);
- NESS or UNAEES site summary reports;
- Other ecological inventories, where available (e.g., wetland evaluation reports);
- Database records from the NHIC (Get natural heritage information | Ontario.ca);
- Online resources such as iNaturalist;
- Local field naturalists' reports and journal articles (e.g., *The Canadian Field-Naturalist*, *Trail and Landscape*, etc.); and,
- Local scientists, naturalists and residents.

In some cases, a three-season plant inventory may be required. Pre-consultation is important in order to clarify the requirements of the EIS, prior to starting fieldwork. This will help to

ensure that projects proceed in a timely manner and are not subject to delays due to insufficient information.

A Detailed EIS report will include the following:

- A description of vegetation communities, cross-referenced to the map of the natural environment for the site;
- A list of vascular plants on or adjacent to the site, if identified as a requirement in the preliminary or final scope, presented in tabular format with notes on each species' local status according to Brunton (2005) and whether it was directly observed or previously reported;
- An assessment of the site's suitability for any significant species (including species at risk, as defined in Section 3.2.6 below) or communities that would be considered significant wildlife habitat;
- Determination of whether the tree cover on or adjacent to the site fulfills the City's significant woodlands criteria; and,
- Identification of any forest communities posing a high or extreme risk of wildland fire.

If a TCR is also required under the Tree Protection By-Law, then it may be incorporated into the EIS. Refer to the Tree Conservation Report Guidelines for additional information on the specific requirements of the TCR.

3.2.5. Wildlife

As with vegetation cover, a thorough review of available background information on wildlife is expected as part of any Detailed EIS. Incidental observations will be the minimum standard required from fieldwork. The need for specific field studies of various taxonomic groups (e.g., breeding bird surveys, etc.) may be identified during pre-consultation. Sources of background information include, but are not limited to:

- Watershed /subwatershed studies or environmental management plans, where available;
- NESS or UNAEES site summary reports;
- Other ecological inventories, where available, such as wetland evaluation reports;
- Database records from the NHIC (Get natural heritage information | Ontario.ca);
- Online resources such as iNaturalist or eBird;
- Ontario Breeding Bird Atlas website (Ontario Breeding Bird Atlas (birdsontario.org));
- Atlas of the Mammals of Ontario (Dobbyn, 1994);
- Ontario Herpetofaunal Atlas Summary (Oldham and Weller, 2000);
- Reptiles and Amphibians of Ontario (Ontario Nature, 2010);
- Ontario Odonata Atlas (2005);
- Ottawa Bird Count (http://ottawabirds.ca)

- Local field naturalists' reports and journal articles (e.g., *The Canadian Field-Naturalist*, *Trail and Landscape*, etc.); and,
- Local scientists, naturalists, birders and residents.

A Detailed EIS report will include:

- Lists of the species observed, reported or expected to occur on or adjacent to the site, presented in **tabular format**, usually as an appendix. This table should include notes on the species' relative abundance at the site, its residency status (year-round, seasonal or migratory), its use of the site (e.g., nesting, foraging, transitory) and the evidence supporting its presence at the site (e.g., sighting, tracks, previous report);
- Description and mapping of any "wildlife trees" (i.e., trees with visible stick nests, or large trees with cavities) or other features (e.g., rock faces, large logs) that could provide nesting or den sites;
- An assessment of the site's suitability for any significant species (including species at risk, as defined in Section 3.2.6 below) or declining bird species, as indicated in Appendix 7.1; and,
- An assessment of whether any significant wildlife habitat is present on or adjacent to the site (see Appendix 8).

For a Minor EIS, a list of incidental species observations may be considered sufficient. The list should include all wildlife species known or suspected to occur in the vicinity of the property and should indicate why it is believed to be present (e.g., direct observation, tracks seen, call heard, reported previously). Where possible, the EIS should specify whether the animal lives on the property or whether it is a visitor (e.g., looking for food or migrating through). The Minor EIS Form provides a table for such information as shown below.

Example:

Species Name	Resident/Visitor	Evidence
American robin	Resident	Nest with eggs
Raccoon	Visitor – foraging around pond	Tracks seen
Snapping turtle	Resident in pond	Reported by neighbour
Monarch butterfly	Visitor – adult feeding on flowers in garden	Seen

3.2.6. Habitat for Species at Risk

The general term "species at risk" (SAR) includes any species listed at the provincial or federal level under the *Endangered Species Act, 2007* (ESA, 2007) or the *Species at Risk Act* (SARA) respectively. These lists are similar, but not always consistent in terms of which species are included and in which risk category (extinct, extirpated, endangered, threatened, special concern). The legislated lists are periodically updated to reflect changes in species status. Natural Systems staff at the City maintain a list of species at risk known or suspected to occur here, for use in development review and other planning. The City's list, and the official provincial and federal lists, must be compared against the species lists compiled for the EIS (described in Sections 3.2.4 and 3.2.5 above); any species at risk identified must be highlighted in the EIS species lists, with its current status noted. The EIS must cite the date on

which each list was consulted, so that the currency of the information in the EIS can be verified during the review process.

The MECP implements the provincial *Endangered Species Act, 2007*. It has developed a review process for projects or activities that might affect endangered or threatened species, to ensure that applicants do not contravene the Act. In cases where impacts to the species or its habitat cannot be avoided, the Act provides for specific circumstances under which it may be possible to obtain a permit or other authorization. The City's EIS process is generally consistent with the MECP review process (e.g., preliminary screening, information gathering, impact assessment and mitigation) although the MECP has developed its own preferred forms for applicants to use. More information on the MECP review and permit process is available at: How to get an Endangered Species Act permit or authorization | Ontario.ca.

As part of the pre-consultation process, the City will conduct a basic species at risk screening and inform the applicant if any known areas of potential or confirmed habitat for species at risk occur near the subject site. The screening process consists of a review of the NHIC data provided for such purposes by the MECP, other available information on species occurrence and range, and the known habitat characteristics of the subject site based on aerial photography and other available background information. This information, along with any other background information gained from the sources listed below, must be verified during the preparation of the EIS in accordance with MECP guidance. The absence of information does not necessarily imply absence of the species or its habitat; it is the applicant's responsibility, via the EIS, to demonstrate whether habitat exists.

Sources of information on species at risk include those listed in Sections 3.2.3 through 3.2.5 above, as well as:

- Species status and assessment reports by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) available through the Species at risk public registry - Canada.ca
- The Species at Risk in Ontario (SARO) site at Species at risk | Ontario.ca
- For aquatic species at risk, distribution maps provided by DFO can be accessed at Aquatic species at risk map (dfo-mpo.gc.ca).

If the potential is identified for species at risk to occur in the area, and suitable habitat exists on the subject property, then a field survey must be conducted by a qualified person who is familiar with the species, during the appropriate time(s) of year. The proposed field survey methodology must be consistent with MECP protocols or be reviewed by the MECP prior to commencement of the work, to ensure that the proposed approach is appropriate. The survey methodology, including timing and level of effort, must be clearly stated in the EIS, along with the results, whether positive or negative. If the presence of species at risk is confirmed, the EIS must include a map showing location(s) of species observations, specific habitat area(s) and movement corridors on the development site or in the affected surrounding area. **The MECP may require that this map and other specific data on the location(s) be removed from the EIS report prior to public circulation for the protection of the species.** The general map of the natural environment may only include the map of habitat for species at risk in cases where the species involved is not considered data-sensitive by the MECP, and provided that the scale and resolution allow precise depiction of species' locations and

habitats. All observations of species at risk should be reported to the NHIC using the on-line reporting form at http://www.ontario.ca/page/report-rare-species-animals-and-plants.

In cases where apparently suitable habitat is identified adjacent to the subject property, but access cannot be obtained to conduct the field survey, the EIS must proceed on the basis that the species may be present and map the habitat as unconfirmed. Recommendations for mitigating any potential impacts on the species or its habitat from the proposed project must be included in the EIS.

The City protects the habitat of species at risk in two ways, depending on species status. Habitat for provincially endangered and threatened species is protected from development or site alteration unless authorized under applicable provincial or federal legislation. The City will require an EIS to demonstrate that no negative impacts will occur for development or site alteration adjacent to known areas of protected habitat. The MECP may be asked to review EIS reports that identify habitat for endangered and threatened species, and will approve the extent of any regulated habitat for these species.

Habitat for provincial species of special concern is considered significant wildlife habitat, which is also protected under the PPS and the Official Plan, although not to the same degree. Development or site alteration may occur within or adjacent to significant wildlife habitat provided that an EIS demonstrates no negative impacts will result. For more information on the interpretation and assessment of significant wildlife habitat in the City of Ottawa, refer to Appendix 8.

The federal *Species at Risk Act* applies mainly to federally owned land, and thus is not normally relevant to the City's development review process. Federal development projects have their own environmental assessment process and do not typically require municipal approval. However, it should be noted that fish and migratory birds are both under federal jurisdiction wherever they occur, and thus the provisions of the SARA apply to private land in those specific cases. The level of protection afforded by the SARA depends upon which schedule and risk category a species is listed under. Areas of habitat for any species listed under Schedule 1 of the SARA, which is not also listed as endangered or threatened provincially, will be considered significant wildlife habitat. In cases where a proposed project may impact fish or other aquatic species listed under the SARA, or their critical habitat, DFO should be consulted to determine whether federal authorization will be required.

3.3. Description of the Proposed Project

In order to assess the environmental impacts of the proposed project on the identified natural features and functions on and adjacent to the site, a clear understanding of the project is required. The project description must include information about all phases of the project, including site preparation, construction, landscaping and intended use of the property once the construction work is completed, and (in some cases) decommissioning, if this information is available. Any related off-site works by the proponent must also be included in the project description and impact assessment. For changes in land use, the project description must identify the current and proposed Official Plan designation(s) and/or zoning and discuss the associated changes in permitted land use(s). The level of detail should reflect the size and complexity of the development or site alteration; for example, a simple lot severance may require only a single paragraph of description, whereas a plan of subdivision may require several pages with references to supporting plans, studies and reports. The description must

be accompanied by one or more graphic representations of the project, such as a concept plan, preliminary site plan or plan of subdivision, or proposed land use schedule. The Tree Conservation Report Guidelines provide additional direction on the preparation of maps showing the proposed development, if a TCR is required.

It is common for proponents to plan their development or site alteration prior to commencing an EIS. However, such preliminary plans may not adequately address significant natural features or other environmental constraints associated with the property and must therefore be considered preliminary and subject to change, based on the results and recommendations of the EIS and other technical studies, as well as on feedback received during the development review process. Development planning is frequently an iterative process, such that the plans (and supporting studies) may need to be revised several times before the application is approved. The time and cost to a proponent to revise a preliminary concept plan to avoid environmental impacts will not be considered in the evaluation of a planning application and an EIS.

3.3.1. Constraints

All environmental constraints associated with the subject site must be shown on the proposed plan for the subject site. These constraints may have been identified during pre-consultation or they may have been determined as part of the site-specific investigations in support of the application. They include such things as lands zoned for environmental protection, surface water setbacks, geotechnical hazard limits, and forest types associated with a high or extreme risk of wildland fire.

The identification of constraints on a site must include consideration of future climate conditions so that any risks that could be exacerbated by changes in precipitation or temperature regimes can be adequately mitigated. Unstable slopes and wildland fire risk are examples of constraints that could be affected by future climate conditions.

Ideally, environmental constraints will be identified prior to site design. This allows the project to be designed to avoid constraints, rather than trying to engineer a solution or mitigate impacts from a less optimal design.

3.3.2. Plans and Drawings

The use of actual concept plans, development plans, site plans or other figures to illustrate and support the project description is strongly encouraged. At a minimum, the EIS must include one or more plans showing the proposed development or site alteration as an overlay applied to the map of the natural environment. The following information should be included in the plan(s), to the extent possible:

- Location of all existing and proposed lot lines, building envelopes and structures, fences, driveways, parking areas and roads;
- Services, including stormwater management facilities and drainage systems, septic system envelopes (where applicable), public infrastructure and utility corridors;
- Erosion and sediment control measures;
- Grading limits and post grading contours; and,

- Natural features and areas of vegetation that will be removed.

This level of detail will not be available nor appropriate for all projects. Additional information may still be in development and the results of the EIS should inform and be incorporated into the final plans for the project.

In cases where the EIS will also function as a TCR, the requirements established by the Tree Conservation Report Guidelines for Map #2 – Proposed Development and Conserved Vegetation must be met. The required information may be incorporated into the proposed plan overlay accompanying the EIS, or it may be submitted as a separate Tree Conservation Plan.

3.4. Impact Assessment

Once an understanding of both the natural environment context and the proposed project has been established, the identification and assessment of impacts can begin. Assessing impacts and recommending appropriate mitigation measures is the most difficult and important task of the EIS. Although these topics are discussed separately below, they may be combined within the EIS report. The EIS may also present options under different development scenarios, clearly outlining impacts and mitigation for each one.

Applicants who are completing a Minor EIS without the assistance of consultants with professional experience in impact assessment should refer to the standard mitigation measures for specific circumstances provided in Appendix 9. The provincial Natural Heritage Reference Manual (MNR, 2010) also provides examples of typical impacts and associated mitigation measures in Table C-1 of Appendix C. Where wetlands and watercourses are involved, the Conservation Authorities may be able to provide additional input. City staff may also be able to provide some assistance in the identification of impacts and mitigation measures.

3.4.1. Impact Thresholds

The Official Plan establishes varying thresholds of negative impacts that must be considered in an EIS. The strictest of these thresholds, **no negative impacts**, applies to certain environmentally designated lands (Urban Natural Features, Natural Environment Areas and Conservation Areas), the Natural Heritage System overlay (both core natural areas and linkages), and lands adjacent to provincially significant wetlands. For natural heritage features that lie outside the system, the City may be willing to accept a less stringent interpretation of that threshold: **no net negative impacts**, which allows for consideration of ways to offset or compensate for unavoidable impacts. The Official Plan further establishes a goal of **no net loss** of forest cover and non-provincially significant wetlands in the rural area. These concepts are explained further below.

When assessing activities authorized under the *Aggregate Resources Act*, EIS authors and City staff should consider the long-term rehabilitation plans and ultimate intended condition of the site. Mitigation measures to avoid or reduce impacts during the development and operation of the site must be recommended, in compliance with the PPS direction that extraction shall be undertaken in a manner which minimizes social, economic and environmental impacts. The overall determination of negative impacts for such projects should be made in the context of the final rehabilitated state, however, rather than the interim or immediate post-extraction state.

No Negative Impact

The Official Plan and the PPS both use the phrase, “no negative impact” when establishing the performance standard for the effect of a development or site alteration on the Natural Heritage System and certain natural heritage features. Where uncertainties or disagreements arise regarding the determination of impacts as described in the following sections, the Provincial Policy Statement and the Official Plan provide guidance on their resolution. According to the PPS, “negative impacts” means:

a) in regard to policy 2.2, degradation to the quality and quantity of water, sensitive surface water features and sensitive ground water features, and their related hydrologic functions, due to single, multiple or successive development or site alteration activities;

b) in regard to *fish habitat*, any permanent alteration to, or destruction of *fish habitat*, except where, in conjunction with the appropriate authorities, it has been authorized under the *Fisheries Act*; and

c) in regard to other *natural heritage features and areas*, degradation that threatens the health and integrity of the natural features or *ecological functions* for which an area is identified due to single, multiple or successive *development* or *site alteration* activities. (p. 47)

Section 5.6.4.1 of the Official Plan provides additional direction on the evaluation of impacts on the Natural Heritage System. Policy 1 says:

a) In Natural Heritage System Core Areas, development or site alteration shall maintain or enhance the integrity, biodiversity, and ecosystem services of the area; and, not compromise the potential for long-term enhancement and restoration of the ecological integrity, biodiversity, and ecosystem services of the area; and

b) In Natural Heritage System Linkage Areas, development or site alteration shall maintain or improve the ecological and recreational connectivity of the area; and, not compromise the potential for long-term enhancement and restoration of ecological and recreational connectivity of the area.

Where a severance that would otherwise meet the policies of the Official Plan is proposed within the City’s Natural Heritage System, staff will work with the applicant to minimize any negative impacts to the extent possible through such means as identifying an appropriate development envelope and applying standard mitigation measures. It is not the City’s intent to prevent otherwise legal severances from occurring in these areas.

No Net Negative Impact

The term “no net negative impact” is sometimes interpreted to mean the same thing as no negative impact, but the City recognizes a clear distinction between these two concepts. If a project is anticipated to cause negative impacts, and those impacts cannot be completely avoided or mitigated, then there will be a negative impact remaining. It may be possible to provide some form of compensation to off-set that impact, thereby resulting in no *net* negative impact, but this is not the same as causing no negative impact in the first place. The principle of compensation or off-setting for anticipated negative impacts has been widely accepted and applied under the *Fisheries Act*, *Endangered Species Act*, *Conservation Authorities Act*, and the City’s own Tree Protection By-law. The City is prepared to allow proponents and staff to apply this approach to projects affecting certain types of natural heritage features located outside of the Natural Heritage System. It will not be applicable to projects involving provincially significant wetlands or other designated natural areas.

No Net Loss

Wetlands and woodlands, regardless of their evaluated significance under provincial policies, provide valuable ecological services. Ottawa’s extensive rural area includes substantial amounts of wetland and forest cover that benefit the entire city and the surrounding region. The Official Plan includes a policy to ensure that future development does not result in reductions to these services, by requiring the City to take a no net loss approach to rural wetland and forest cover outside of villages. City staff will consider this policy during the review of rural site plans and plans of subdivision. A variety of mechanisms may be used to achieve this goal, including off-site compensation where losses are unavoidable and cannot be adequately mitigated on-site. Securement of existing wetlands or woodlands for preservation does *not* constitute compensation in such cases, because this would still result in a net loss.

The no net loss policy does not override stronger protections, such as the *no development or site alteration* policy for provincially significant wetlands or the *no negative impact* policies for the Natural Heritage System.

Wildland Fire Risk

The Provincial Policy Statement says that:

> Development shall generally be directed to areas outside of lands that are unsafe for development due to the presence of hazardous forest types for wildland fire.
>
> Development may however be permitted in lands with hazardous forest types for wildland fire where the risk is mitigated in accordance with wildland fire assessment and mitigation standards.

The Province’s Wildland Fire Risk Assessment and Mitigation Reference Manual elaborates on this direction. It says:

> While the policy priority is that development shall be directed away from areas associated with the risk of high to extreme wildland fire, there is some leeway. Where the proposed development cannot be relocated, it may be acceptable for development to occur on lands affected by the hazardous forest types, if the risk is mitigated to moderate or low (p. 11).

The Reference Manual makes it clear, however, that mitigation measures cannot have a negative impact on natural heritage.

> If wildland fire mitigation measures such as vegetation manipulation are proposed, and they would result in negative impacts, then such mitigation measures cannot be applied. If there are no mitigation measures that would avoid negative impacts on the feature or its ecological functions resulting from the proposed development, development on the subject lands should not be permitted in order to be consistent with both natural heritage and wildland fire policies in the PPS, 2014 (p. 14).

In the context of Ottawa's natural heritage policies, proposed wildland fire mitigation measures must be assessed against the thresholds of "no negative impact" or "no net negative impact", as applicable.

3.4.2. Principles of Impact Assessment

Human activities associated with development and site alteration cause changes to the local environment, which are also termed environmental effects. Negative effects, commonly referred to as impacts, are the normal focus of an EIS. The impact assessment, as with other aspects of the EIS, must include the adjacent lands and not be limited to only the subject site. Some projects, such as habitat restoration or enhancement works, or the restriction of land uses for environmental protection, are undertaken for the express purpose of creating positive environmental effects. Other development or site alteration projects also have the potential to produce some positive environmental effects, when appropriately designed and implemented. The EIS should identify any positive effects associated with the project.

Impact assessment is predictive and often requires experienced professional judgment. Three key factors to the production of a solid, defensible impact assessment are:

Integration: Because many potential impacts interact, the assessment must integrate all study areas (e.g., terrestrial and aquatic biology, hydrogeology, surface water, and engineering aspects of the proposed project). This will require a high level of communication among members of multi-disciplinary teams.

Quantification: Whenever possible, measure potential impacts using empirical evidence against existing benchmarks. For example, how many hectares of forest cover or interior forest may be lost? What percentage of the site, the feature and/or the subwatershed does this represent? Although quantitative information may not always be available, an effort must be made to include it.

References: Impact assessments, especially those indicating "no impact" or "low impact" must be supported by scientific literature or relevant secondary sources (e.g., local or case studies, current research). This is especially important where quantitative information is not available.

The precautionary principle should be applied in any impact assessment, such that wherever the potential for serious negative impacts exists, or where there is a lack of full scientific certainty, the assessor's recommendations should be designed to prevent any such impacts occurring.

3.4.3. Assessing Impacts

The major steps in assessing impacts are outlined below.

First, compare the proposed project activities with the existing natural environment and identify all activities that will change or cause stress to the natural features and ecological functions both on and off the site. Environmental effects may result from initial site investigations, site preparation and construction activities, site occupancy, or subsequent decommissioning/ demolition. All stages of the development or site alteration project must be included in the assessment. Some planning applications, such as Official Plan amendments or Zoning By-law amendments, may not in themselves cause environmental effects, but they enable these effects by changing the permitted uses of the lands. They must be evaluated for the potential impacts of those changes.

Next, classify the potential environmental effects into negative impacts and positive environmental effects, and characterize them using standard criteria such as:

- **Nature of impact**: Is it direct, such as the loss of a feature, or indirect, such as an increase in downstream sedimentation?
- **Magnitude**: What is the severity of the impact, especially as compared with available benchmarks or targets?
- **Geographic extent**: How large an area will be affected?
- **Duration and timing**: Is the impact temporary or permanent? Is it seasonal?
- **Likelihood**: What is the probability that the impact will occur?
- **Potential for cumulative impacts**: What is the potential for interacting impacts as a result of previous or future development or site alteration? See Section 3.4.4 below.

Based on the classifications determined above, evaluate the significance of the potential impacts of development, with respect to the sensitivity and significance of the natural features and/or ecological functions affected. Consider the potential effects of climate change during this characterization and evaluation process; will a particular impact be more severe, more frequent, or more likely to occur in future?

Negative impacts expected on specific values or functions that contribute to the significance of a designated natural area or natural heritage feature **must** be addressed: e.g., the removal of the mature stand, interior forest habitat or connection to water from a significant woodland; the loss of vernal pools or other amphibian breeding sites in areas of significant wildlife habitat.

Potential impacts on natural features and functions that are not identified as meeting criteria for significance should also be addressed, where applicable, keeping in mind the City's no net loss policy for rural forest cover and wetlands.

Wildland fire hazards and risks must be assessed in accordance with the Wildland Fire Risk Assessment and Mitigation Reference Manual.

Negative impacts will need to be reassessed to determine whether the impact can be completely mitigated or not: i.e., is there a residual impact remaining after the implementation

of recommended mitigation measures? As noted in Section 3.5 below, mitigation measures intended to address negative impacts must be practical and implementable to be effective. Mitigation measures that cannot or will not be implemented should not be used to support a finding of no negative impact or no net negative impact.

3.4.4. Identifying Cumulative Impacts

Cumulative impacts are compound environmental effects that may result due to multiple or successive development or site alteration activities and other environmental changes. Cumulative impacts may affect natural features or their ecological functions, water quality or quantity, sensitive surface or groundwater features, and their related hydrologic functions. They are an important consideration in any environmental impact assessment, at the municipal, provincial or federal level. Cumulative impacts are particularly important in the assessment of surface water features, including wetlands, and significant woodlands.

Potential cumulative impacts are estimated by considering project effects within an expanded geographic area as well as a longer timeframe. For example, a cumulative impacts analysis should consider a reasonable and ecologically relevant broader area within which the proposed development is located, such as the subwatershed. Development in the recent past (e.g., 10-20 years) and probable development activities in the future should be described, and if relevant, mapped. Climate projections should also be taken into consideration when assessing cumulative impacts.

Examples of potential cumulative impacts include:

- Expected direct and indirect impacts of development applications in progress (or approved) in the area that may affect regional features or functions: e.g., total forest cover, cumulative loss of portions of a significant feature, regional availability of interior habitat, surface water quality or quantity, groundwater quality or hydrologic function;
- Potential for further demand on resources: e.g., likelihood for nearby development based on location, demographics, designation or zoning, or presence of available resources such as aggregates.

Possible sources of information for assessment of cumulative impacts include:

- Past and present aerial photographs;
- Subwatershed studies, where available;
- City of Ottawa Official Plan and Schedules;
- City of Ottawa Development Application Search website (for development applications received after February 1, 2008) at Development Applications Search (ottawa.ca) ;
- City Planning staff (for development applications received prior to February 1, 2008);
- Climate Projections for the National Capital Region Climate Resiliency | City of Ottawa and relevant regional and provincial climate risk assessments and adaptation measures
- Urban Heat Island mapping
- Water quality data (Ottawa's Water Environment Protection Program, the local Conservation Authority, provincial Water Quality Monitoring Network); and,

- Observations of local scientists, residents, naturalists, or biologists (e.g., Ottawa Field-Naturalists' Club, Conservation Authorities or other agency staff).

3.5. Mitigation

Mitigation measures must be identified for each potential negative impact, to eliminate or reduce the impact to the extent possible. Preferred mitigation measures avoid or minimize impacts, and in some cases (i.e., no net loss / no net negative impacts) may be supported by compensatory measures such as site rehabilitation or restoration. Examples of possible mitigation measures are included in the provincial Natural Heritage Reference Manual (MNR, 2010; refer to Table C-1 of Appendix C). The City's Protocol for Wildlife Protection during Construction provides guidance on mitigating impacts to wildlife.

In most cases, the selection of appropriate mitigation measures will be the responsibility of the applicant and/or their consultants, for approval by the City as part of the EIS and development application review process. In certain specific cases, however, the City is recommending standard mitigation measures be adopted (see Appendix 9). EIS recommendations that vary from these standard measures will need to be accompanied by a detailed explanation of the rationale behind the change, along with scientific evidence or other support for the alternative approach. Applicants and/or their consultants are advised to consult City staff regarding any proposed variation from these standard measures prior to the submission of the EIS report, to determine whether the proposed alternative is acceptable.

Mitigation measures that cannot (or will not) be implemented are not effective and should not be recommended. Consultants should ensure that the measures being recommended are practical and will not conflict with other recommendations or requirements applied to the project. Applicants must implement the recommended mitigation measures, to remain compliant with the conditions of their approval and the policies of the City's Official Plan.

Avoiding or eliminating impacts through design (or redesign, where necessary) is the preferred approach, and should always be considered as a first step. Designing around the feature is the only option when significant wetlands occur within a proposed project's boundaries. Habitat for endangered and threatened species must also be avoided whenever feasible, in accordance with the requirements of the *Endangered Species Act*. Recommendations for the preservation of natural features within or adjacent to the project area must be accompanied by recommendations regarding appropriate setback distance(s) and any buffer required to protect the feature and its ecological functions from impact.

Minimizing impacts to the extent possible is expected when avoidance is not feasible. Examples include the establishment of strict limits on the extent of vegetation clearing for new residential lots, or the use of specific timing windows for construction to reduce impacts on wildlife by avoiding sensitive life stages such as breeding seasons or hibernation. The supporting rationale for these measures should be included in the EIS. Contingency or alternative measures should also be included in cases where the recommended mitigation may not be possible based on site conditions or scheduling changes.

Compensation may be required in specific circumstances where impacts cannot be avoided or minimized. For example, DFO may require that fish habitat in one area be rehabilitated or restored to replace lost habitat in other areas. Compensation plantings will be required as a condition of the permit to remove trees under the City's Tree Protection By-law. Restoration

and enhancement may also be required under the City's Official Plan policies, to support the long-term conservation of the City's NHS and its rural woodland and wetland cover. Securement of existing natural features for preservation does not constitute compensation for losses in other areas. Compensation is not always possible and should not be proposed in order to justify causing avoidable impacts.

Mitigation of wildland fire risks must follow the guidance in the Province's Wildland Fire Risk Assessment and Mitigation Reference Manual. In areas where extreme or high hazardous forest types for wildland fire have been identified, a project may only proceed if mitigation can reduce the risk of wildland fire to moderate or low in accordance with provincial and Official Plan policies for protection of natural heritage.

In proposing mitigation measures, an EIS should refer to recent science and/or guidelines, where necessary, to demonstrate that the measures will be sufficient to minimize impacts or replace lost habitat. This is particularly appropriate in the determination of appropriate setbacks and buffer widths, as well as in the design of habitat restoration or enhancement projects. The province's Natural Heritage Reference Manual (MNR, 2010) provides lists of references that may be useful.

Specific changes made to the proposed project as a result of the EIS analysis must be outlined in full and mapped, if relevant. Location and plan details should be provided, and a judgment made about the impact reduction that would result from proposed mitigation. Again, be as specific and quantitative as possible. Mitigation measures may also be presented as a series of options if desired.

For projects involving changes in land use or severance of lots, where there may be no physical impacts associated with the project (in the absence of actual site alteration or construction), the recommended mitigation measures should focus on avoiding or minimizing the potential for future impacts from subsequent projects. This can be accomplished through restricting potential land uses in identified significant natural features and other areas subject to environmental constraints, through Official Plan designations, zoning, or other site-specific measures such as conservation easements. Recommendations regarding specific EIS requirements for subsequent applications may also be appropriate, particularly in the case of Official Plan amendments.

For developments adjacent to natural features, the analysis should focus on mitigating impacts on the feature(s) by, for example, establishing development setbacks and vegetated buffers, addressing increased recreational use, developing educational materials for local residents, etc. Opportunities for restoration or enhancement of the natural area, and any measures that would support its long-term conservation, should be identified in the EIS.

A Minor EIS will include a summary table of potential impacts and recommended mitigation measures, based on the template provided in the Minor EIS Form. The information in the table may be supported with plans or drawings where available (e.g., sediment and erosion control plans, tree conservation plan).

A Detailed EIS will include the following:

- A full description of proposed mitigation measures, including recommendations for timing windows or other specifications for implementation, for all potential negative impacts;
- For each negative impact, an indication of whether there will be any residual impact following implementation of the recommended mitigation measure(s);
- A description of proposed restoration or enhancement plans to compensate for impacts that cannot be avoided or minimized;
- Maps and/or drawings (if relevant) depicting the location, extent, and design details of proposed mitigation measures (e.g., sediment and erosion control plan); and,
- A summary table of potential impacts and recommended mitigation measures, based on the template provided in the Minor EIS Form.

3.5.1. Setbacks and Buffers

While these terms are often used interchangeably, setbacks and buffers are not the same thing. A **setback** is the separation distance required between a natural feature (or hazard) and a project area, to prevent impacts from occurring to either the feature or the project. It is sometimes referred to as the development limit. **Buffers** are areas of natural vegetation that serve to attenuate and otherwise reduce impacts on the natural feature and its functions. They may occupy part or all of a given setback or they may extend beyond the setback if the adjacent land use allows (e.g., passive park features, golf course roughs, undeveloped portions of private properties).

The determination of appropriate setback distances and buffer widths is often controversial, due to conflicts between the desire to maximize the useful developable area of a property, and the need to adequately protect significant natural features and functions. The City has not established standard setbacks and buffers in many cases, due to the many variables involved in determining what the distance should be. Section 4.9.3 of the Official Plan does provide direction on how minimum setbacks to surface water features are to be determined (see also Appendix 10). For other natural features, the appropriate width will be determined based on the sensitivity of the feature or its ecological functions, and on the type of project proposed. Additional considerations may include the need to provide access for maintenance activities by the City or the desire to incorporate recreational trails along the edges of features. Some specific notes on various natural features include:

- Setback and buffer distances for significant wetlands need to be designed to allow continued access to upland areas that provide necessary habitat for wetland species during part of their life cycle, such as nesting or foraging sites. They may be required to protect supporting surface water features or groundwater supply.
- Setbacks and buffers around significant woodlands, Urban Natural Features and other wooded features are often particularly contentious, so the rationale for these recommendations must be clearly explained and well referenced.
- Setbacks along significant valleylands must address geotechnical issues, fish habitat if present, and wildlife habitat functions. The ecological contributions of any natural habitat areas on the adjacent tablelands must also be considered.

The Natural Heritage Reference Manual (MNR, 2010) provides useful recommendations and background information, including an annotated bibliography, on the subject of buffers for various natural heritage features.

When recommending setbacks and buffers, it is vitally important to clearly define the basis of measurement to reduce the risk of errors in interpretation at the time of implementation. The EIS must include diagrams or maps showing the setbacks and buffers, their origins, and any necessary information such as topographic mapping, aerial photography, and legal surveys. Key points to keep in mind include:

- For surface water features where a Council-approved study has not already established development limits, the Official Plan directs that the minimum setback be the greater of several possible limits (e.g., Conservation Authority hazard limit, 30 m from top of bank, or 15 m from the stable top of slope); see Appendix 10 for more information. The defining or governing limit may vary along the length of the feature, so it is important to show all applicable limits when demonstrating how the minimum setback for the site was established.
- For specimen trees and wooded features, setbacks and buffers are often measured "from the drip line," however, the City prefers the following terminology when identifying setbacks for activities around trees:
    - The critical root zone (CRZ) is the area around the tree at a radius 10 times the diameter of the tree (at breast height). It is the minimum area that must remain unaltered by cutting, filling, trenching, soil compaction or contamination during construction to avoid harming the tree. The City's Tree Conservation Report Guidelines include standard protection measures for the CRZ of trees to be retained (see Appendix 9). The Tree Protection By-law requires the protection of the critical root zone for all trees unless otherwise authorized through a tree permit.
    - The primary root zone is the area to the drip line (or outer edges of the canopy), or a circle with the radius equal to the height of the tree, whichever is greater. Activity in this area should be limited. The area can be altered with the guidance of an arborist.
    - The auxiliary root zone is the area one and a half times the canopy, or with a radius one and a half times the height of the tree, whichever is greater. Activities in this area have less effect on the tree; however, some activities still need to be restricted.
- For some natural features, the boundary of the feature and any associated setbacks or buffer distances may need to be confirmed in the field as a joint exercise between the applicant, their consultant(s) and relevant agency staff.
- Once agreed upon, all setbacks must be clearly delineated on the project plans.
- Mitigation measures relating to the protection of setbacks and buffers during on-site works (such as fencing) must be implemented prior to the commencement of those works. The City may impose conditions to this effect.

3.6. Monitoring

Where impacts have been avoided or minimized using conventional mitigation measures with proven effectiveness, monitoring may not be needed. In cases where negative impacts have not been eliminated, or where innovative solutions are being used, monitoring may be required to measure impacts over time. Monitoring may also be required by other agencies such as DFO, the MECP, or the local Conservation Authority under their respective regulatory processes. The EIS must identify any monitoring needs associated with the project and should provide recommendations regarding the design and implementation of the required monitoring program. Consultation with City staff will be required to establish the scope of all monitoring programs, and to ensure that recommendations are feasible and appropriate.

Monitoring will usually be site-specific and may be required during the pre-construction, construction, and/or post-construction periods. The EIS should:

- Clearly differentiate between monitoring recommendations aimed at ensuring effectiveness of mitigation, and any monitoring required for legal compliance (e.g., to meet conditions of an Environmental Compliance Approval or a permit under the *Endangered Species Act*);
- Specify the appropriate stage(s), schedule and duration for the monitoring program;
- Propose appropriate thresholds or benchmarks for monitoring purposes;
- Identify who will be responsible for monitoring, and the reporting structure required to ensure that results are acted upon as needed; and,
- Outline contingency plans if an impact is detected or if the proposed thresholds are not met.

3.7. Summary and Recommendations

A Detailed EIS report must include a concise summary that addresses major points, and highlights any issues of concern from each subject area. Limitations of the study, such as assumptions, timing and context, should be clearly identified. However, do not repeat large amounts of information already present in the report. The summary table of potential impacts and recommended mitigation measures referred to in Section 3.5 above will constitute a significant component of the report summary.

This section must include a conclusion based on the results of the impact analysis. The assessor's professional opinion must be stated, responding to the following questions:

- Provided that the recommended mitigation measures are implemented as planned, will there be any residual negative impacts on natural features or ecological functions as a result of the proposed project?
- What is the significance of any such residual negative impacts to the natural heritage feature(s)?
- Can the proposed project be accepted as planned, or should it be (further) revised to prevent, eliminate or reduce impacts? If so, what specific changes are recommended to the proposal?

If the EIS report concludes that the project will have a residual negative impact on one or more of the values or functions of the triggering feature(s), then a recommendation to proceed with the project must be accompanied by a rationale for proceeding that is based upon the provisions of the Official Plan and the Provincial Policy Statement. **Projects with residual negative impacts to significant natural features or ecological functions may not be approved.**

For complex reports incorporating material from several contributors on a multi-disciplinary team, the report must include a statement that all contributors have read the entire report and have integrated relevant information into the recommendations for their subject area. This includes cases where the EIS is combined with a TCR, unless both studies were conducted by the same person.

The report must include a statement certifying that the information contained within the EIS is accurate and complete, to the best of the assessor's knowledge. Full names and signatures of the individuals who completed the assessment must be included at the end of the report.

Reports that include a wildland fire assessment must include the signature of a Registered Professional Forester or other qualified professional.

Appendices to the report should include:

- Literature cited;
- A list of people contacted during the study, along with their title and agency affiliation, where applicable, and the subject(s) on which they were consulted;
- Species lists; and,
- Resumés of those who contributed to the report (including field technicians).

Final recommendations and conclusions will be subject to review and revision by City staff. Once agreed upon, recommendations will be incorporated into development agreements between the City and the applicant.

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5. Acronyms

Area of Natural and Scientific Interest (ANSI)

Committee on the Status of Endangered Wildlife in Canada (COSEWIC)

Conservation Authority (CA)

Critical Root Zone (CRZ)

Department of Fisheries and Oceans Canada (DFO)

Ecological Land Classification (ELC)

Endangered Species Act, 2007 (ESA, 2007)

Environmental Impact Study (EIS)

Ministry of Environment, Conservation and Parks (MECP)

Ministry of Municipal Affairs and Housing (MMAH)

Ministry of Natural Resources and Forestry (MNRF)

Natural Environment Area (NEA)

Natural Environment Systems Study (NESS)

Natural Heritage Information Centre (NHIC)

Natural Heritage System (NHS)

Ontario Stream Assessment Protocol (OSAP)

Portable Document Format (PDF)

Provincial Policy Statement (PPS)

Regional Municipality of Ottawa-Carleton (RMOC)

Species at Risk (SAR)

Species at Risk Act (SARA)

Species at Risk in Ontario (SARO)

Tree Conservation Report (TCR)

Urban Natural Areas Environmental Evaluation Study (UNAEES)

Appendix 1: Minor Environmental Impact Study (EIS) Form

This form is intended for use by applicants (primarily private landowners) who need to conduct a Minor EIS in support of minor development applications such as single lot severances or minor changes in land use. Instructions on the types of information needed are included in the form, with additional information provided following the form. The form also includes references to specific sections of the City of Ottawa's *Environmental Impact Study (EIS) Guidelines* for more detailed information on EIS requirements.

You may not need to complete every section of this form. City of Ottawa staff (the environmental planner, Planning Services) can advise you which sections need to be completed for your specific project.

If you do not know the answer to a question, please enter "unknown." City staff may be able to assist you in answering the question during their review of the development application and EIS.

Completion of this form does not constitute or guarantee any type of planning approval.

When is an EIS Required? **(EIS Guidelines, Section 1.2)**

You have been asked to provide an EIS because you are proposing a development or site alteration project in or adjacent to environmentally designated lands, the City's Natural Heritage System (NHS) or other natural heritage features. The EIS Decision Tool (Appendix 2 of the EIS Guidelines) provides a checklist of these EIS 'triggers'. Note that the distances that trigger an EIS may be different for urban and rural areas. These distances are normally measured from your property boundary to the edge of the designated lands or natural feature. For projects that require approval under the Site Alteration By-law, the distance is measured from the edge of the proposed work area.

In accordance with the Provincial Policy Statement and the Official Plan, the basic principle of the EIS Guidelines is that:

The EIS must demonstrate how the proposed development or site alteration will satisfy the requirements of the Official Plan with respect to protection of the Natural Heritage System, natural heritage features, and their ecological functions.

In many cases, you can avoid or greatly reduce the risk of negative impacts by locating your project (whether it is a new building or a new lot) away from the significant natural features identified. In other cases, you may need to schedule parts of the work to occur outside of sensitive times of the year for wildlife.

REQUIREMENT FOR PRE-CONSULTATION
(EIS Guidelines, Sections 1.3, 2.1 and 2.2)

Before completing this form, you must discuss your proposed project with one of the environmental planners of the City of Ottawa. They will determine if an EIS is required, and if so, whether you need to submit this form or a Detailed EIS report.

Please provide the name(s) of the City staff you have discussed the EIS requirements with, and the date(s) of the discussion:

1. PROPERTY IDENTIFICATION
(EIS Guidelines, Section 3.1)

1.1 Property Owner's Name:

Paul Farmer

1.2 Municipal Address of Property:

2450 Sixth Line Rd #D, Dunrobin, ON K0A 1T0

1.3 Lot, Concession and Township (rural properties only):

Part of Lot 24 (D), Concession 8

1.4 Property Information Number(s):
(available at geoOttawa)

04528-0089

1.5 Mailing Address (if different from property address):

2060 Bearhill Rd, Carp ON, K0A 1L0

1.6 Land Use Designation[s] and Zoning from the Official Plan (ottawa.ca/officialplan) and Zoning By-Law (ottawa.ca/zoning):

RU- City of Ottawa Zoning By-law 2008-250 Consolidation, Part 13, Section 227

1.7 Existing and past land uses:

Vacant land

REQUIREMENT FOR SITE VISIT
(EIS Guidelines, Sections 2.2 and 3.2)

If you currently live on the property, please indicate how long you have lived there:

You must have visited the site at least once during the growing season for the purpose of evaluating the proposed project impact on the natural environment. Please fill in the following table with the required site visit information.

Date	Time	Personnel Involved	Weather Conditions	Purpose of Visit
08-29-2024	9:15	Paul Kealey, designer and Land owner (Paul Farmer)	Sunny	Gather property data for site plan

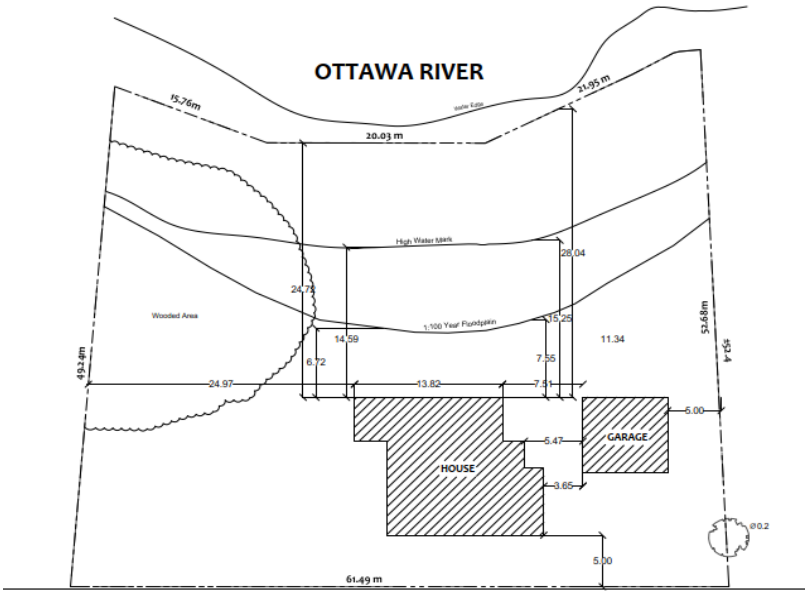
2. Description of the Site and the Natural Environment
(EIS Guidelines, Sections 1.5, 2.1, 2.2 and 3.2)

2.1 General Map of the Natural Environment
(EIS Guidelines, Section 3.2.1)

Please attach a map showing your property in relation to the surrounding environment, including the natural features on and/or adjacent to the site (note: your property line must be clearly indicated). Recent aerial images can be obtained through the City's interactive mapping tool at http://maps.ottawa.ca/geoOttawa/.

Photographs of the property also help to illustrate the existing conditions on the site.

Please describe the significant natural feature(s) on or adjacent to your property and indicate the feature's location(s) relative to your project.



2.2 Landforms, Soils and Geology
(EIS Guidelines, Section 3.2.2)

Please describe the physical environment: the landform (e.g., sloped, flat, valley, hill, etc.) soils (e.g., silty, sandy, clay, peat, etc.) and depth to bedrock and type (e.g., limestone, shale, granite, etc.). Identify the source(s) of information used (e.g., personal knowledge, well record, available mapping). Attach copies of mapping and other supporting documentation when available.

0.00 - 0.50 Top soil over bedrock

Source of information: Engineered site plan *(Attached)*

2.3 Surface Water, Groundwater and Fish Habitat
(EIS Guidelines, Section 3.2.3)

Please describe the surface water features (e.g., creeks, drains, ponds, etc.) including their approximate widths and depths, duration of flow (i.e., is water present all year round or not) and location relative to your project. Are there any places where ponds occur during springtime or after storms? Describe drainage and groundwater conditions, including depth to groundwater where known.

There's no surface water on the property observed year- round. The property is adjacent to the Ottawa river, and the water is at natural fluctuating levels throughout the year. The line of the floodplain is shown on the engineer's site plan.

Do any of the surface water features contain minnows or other fish? Please list the kinds of fish present (if known).

Unkown

2.4 Vegetation Cover

(EIS Guidelines, Section 3.2.4)

Describe each of the types of vegetation community shown on the natural environment map (e.g., lawn, cropped field, old field, marsh, thicket/scrub, swamp, woods, etc.). List the most common plants observed in each of these communities, if possible.

The property is 95% cleared. There are some scattered white pine trees on the property.

Overburden/less than 0.5 m of topsoil over bedrock dominates the property.

2.5 Wildlife

(EIS Guidelines, Section 3.2.5)

List all wildlife species known or suspected to occur in the vicinity of the property. Where possible, specify whether the animal lives on the property or whether it is a visitor (e.g., looking for food or migrating through). Indicate why each species has been included on this list (e.g., seen, tracks found, call heard, reported previously).

Species Name	Resident/Visitor	Evidence
Squirrils Chipmunks Skunks Mice Rabits Birds Dears	Visitors	The property does not have a real appeal for animals. It's a cleared property, and only a few pine trees. There's not a lot of opportunities for animals to habitat the area.

2.6 Habitat for Species at Risk

(EIS Guidelines, Section 3.2.6)

List any species at risk known or suspected to occur in the vicinity of the property. Indicate why each species has been included on this list (e.g., seen, tracks found, call heard, reported previously). Provide photographs if available.

No at-risks species have been observed or suspected because the property is cleared and very rocky, so undesirable for any specie in general to be in this property.

3. DESCRIPTION OF THE PROPOSED PROJECT

(EIS Guidelines, Section 3.3)

Please attach any available drawings or plans of your proposed project, to illustrate the information provided below.

3.1 What is the purpose of the development or site alteration? (e.g., creation of a new lot for a single detached home, expansion of an existing home, etc.)

Construction of a single detached house with detached garage

3.2 What site preparation, if any, will be required? (e.g., brush-clearing, tree removal, blasting, grading, filling, etc.)

Removal of top soil over rock. 0.2 to 0.4 m of backfill (sand/topsoil)

3.3 What construction or demolition activities, if any, will be required? (e.g., excavation, preparation of foundation/pad, installation of public or private utilities, construction/demolition of a building, landscaping, etc.)

Excavation of topsoil down to bedrock, construction of concrete foundation, installation of 0.2 to 0.4 m of backfill around foundation, then trenching for services (septic, well, hydro).

3.4 What ongoing activities, if any, will occur at the site? (e.g., private residence, operation of a small business, farming, etc.)

Private residense

3.5 Have you consulted with other regulatory agencies (e.g., Conservation Authority, Ministry of Natural Resources and Forestry, Ministry of Environment, Conservation and Parks) to determine whether your project will require their authorization?

We have consulted the Mississipi Valley Conservation Authority and there are no restrictions according to their rules.

4. IMPACTS AND MITIGATION

(EIS Guidelines, Sections 3.4 and 3.5)

4.1 Based on the information provided above, complete the attached summary table to identify the potential impacts of the various project activities on the natural environment on or adjacent to your property, and the mitigation measures that will be used to avoid or reduce these impacts.

4.2 Will the project result in any positive effects on the natural environment? Please include positive effects in the summary table, and provide a brief description below.

Positive effect: We are adding 0.15 to 0.3 m of sand/topsoil which will positively increase the permeability of the property to potentially hold water during periods of high precipitation.

5. CONCLUSION

(EIS Guidelines, Section 3.7)

Will the proposed project result in any negative impacts to natural features or ecological functions, once the recommended mitigation measures have been implemented? *NOTE: residual negative impacts to significant natural features or ecological functions may mean that the project cannot be approved as proposed.*

No negative perception because property is mostly rock and naturally draining all the precipitation towards the river. Only positive results adding 0.5 m of fill that will improve water retention by adding permeable surfaces.

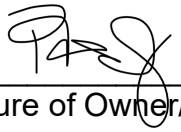
6. DECLARATION

(EIS Guidelines, Section 3.7)

Please provide the names and affiliations of all individuals who contributed to the preparation of this EIS, and indicate their role(s) in the process (e.g., EIS author, biologist, planning consultant, geotechnical engineer). Attach resumés where needed to demonstrate professional qualifications.

Paul Kealey as Designer with BCIN
Kaleb Lakew with Kollaard Associates Engineer, Environmental and Geotechnical
Evan Coburn as Project manager
Mercedes Liedtke, environmental planner with the Mississippi Valley Conservation Authority

I hereby certify that the information contained within this EIS is accurate and complete, to the best of my knowledge. I acknowledge that incomplete or incorrect information may delay the development review process.



Signature of Owner/Applicant — Date: 12-02-2024

Signature of Owner/Applicant

Signature of EIS Author (if different from above) — Date

NOTE: Completion of this EIS form does not constitute or guarantee any type of planning approval

EIS Form, Section 4.1: Impacts and Mitigation Summary Table

Activity	Natural Heritage Feature/Function	Potential Effect (may be positive or negative)	Proposed Mitigation	Residual Effect (may be positive or negative)
Site Preparation	Removal of top soil over bedrock	Existing rocks are naturally sloping away from the built site.	n/a	n/a
		porisitvely increase of permeabilityof permeability	n/a	
Construction	Installation of 0.2 to 0.4 of sand and backbill			positively increase drain-age around new developments , house and garage
Operation	New sand/topsoil fill around house and garage to 0.15 to 0.30m above existing.	positively increase of permeability of permeability	n/a	positively increase drainage around new developments , house and garage
Other	Natural vegetation (note: no significant species or significant woodlands known to occur on site)			

Examples

Site Preparation: Vegetation clearing to allow for house construction.	*Natural vegetation (note: no significant species or significant woodlands known to occur on site)*	*Loss of natural vegetation from site*	*Only clear the area that is required to allow for development (house, well, septic, laneway)*	*Loss of X ha of natural vegetation within development footprint*

OR

Other: Severance of 2 ha vacant lot for sale	*Significant woodland on property*	*If new lot developed in woods, could lose up to 2 ha of woodland*	*New lot will be located outside of woodland*	*None*

GENERAL INSTRUCTIONS FOR COMPLETING THE MINOR EIS FORM

For more detailed instructions, please refer to the appropriate section of the EIS Guidelines. City of Ottawa staff can provide advice on what information is needed for your project.

The Minor EIS may include materials prepared for other purposes, including the associated development application form, which will provide much of the property information requested in Section 1 of the EIS Form.

You may attach as much information to this form as needed. Maps, plans, drawings and photographs are all useful items to include.

The preliminary scope and level of detail required in the description of the site and the natural environment will be established in discussion with City staff during the pre-consultation process.

2. Description of the Site and the Natural Environment
(EIS Guidelines, Sections 1.5, 2.1, 2.2 and 3.2)

- In this section of the form, you will provide information about the existing condition of your property and the surrounding area, identifying any natural features and functions (e.g., significant wetlands or other designated natural areas, significant woodlands, significant valleylands, significant wildlife habitat or habitat for an endangered or threatened species, areas of natural and scientific interest, natural corridors, water features) that might be affected by the proposed development or site alteration.
- Each natural feature that is present on, or adjacent to, the site must be identified and described in a brief summary. At a minimum, the description of the site and the surrounding area must identify, locate and describe the feature(s) that triggered the requirement for the EIS; however, any other features discovered during the EIS must also be included.
- If any forest types associated with a high or extreme wildland fire hazard are identified within 100 metres of your property, you must have a Registered Professional Forester or other qualified professional conduct a wildland fire assessment in accordance with the provincial Wildland Fire Risk Assessment and Mitigation Reference Manual.
- If a Tree Conservation Report (TCR) is required under the City of Ottawa's Tree Protection By-Law, it may be combined with the EIS. Refer to the TCR Guidelines for additional specifications regarding information and mapping requirements (Tree Protection (By-law No. 2020-340) | City of Ottawa).
- The City of Ottawa can provide useful background information and digital mapping (EIS Guidelines, Appendix 4). In some cases, the City of Ottawa's public geoOttawa interactive mapping service (http://maps.ottawa.ca/geoOttawa/) may suffice for the production of figures, aerial photographs and maps. Another useful resource for the production of figures and maps is Land Information Ontario (https://www.ontario.ca/page/land-information-ontario).
- Always cite the sources of information used in preparing the maps, figures and written descriptions.

2.1 General Map of the Natural Environment

(EIS Guidelines, Section 3.2.1)

- A general map of the natural environment is always required. It should include a key map to show the subject site's location in relation to the surrounding major roads and other landmarks.
- The use of aerial photography as a base for the natural environment map is strongly encouraged (and is required under the TCR Guidelines).
- The map will include standard mapping elements such as a scale bar, north arrow, date and legend.
- The map will illustrate and identify all of the existing natural features and vegetation communities on the site and in the surrounding area, including the feature(s) that triggered the requirement for an EIS.
- The map will include topographic information such as general slope trends and specific features such as valleys or gullies, cliffs or escarpments, hills, drumlins, eskers or kettles.

2.2 Landforms, Soils and Geology

(EIS Guidelines, Section 3.2.2)

- A description of the physical environment of the subject site and the affected surrounding area will be required for any EIS where the feature(s) or designation(s) that triggered the EIS are dependent upon or sensitive to the potential effects of the project on landform features, soils or geological conditions (e.g., significant wetlands, significant valleylands, Earth Science areas of natural and scientific interest).

2.3 Surface Water, Groundwater and Fish Habitat

(EIS Guidelines, Section 3.2.3)

- All surface water features (natural watercourses, drains, ponds, wetlands, springs, seeps, recharge/discharge areas) must be included on the map of the natural environment (see Section 2.1 above). Direction of flow, including overland drainage, must also be indicated on the map.
- A description of the surface water features, drainage, and groundwater conditions on the subject site and in the affected surrounding area will be required for any EIS where the feature(s) or designation(s) that triggered the EIS are dependent upon or sensitive to the potential effects of the project on surface water or groundwater flows.
- Examples of cases where a description of surface water and groundwater conditions would be required include (but are not limited to) projects:
    - Adjacent to a significant wetland;
    - Within or adjacent to a significant valleyland;
    - That might affect surface water features, including unevaluated or non-provincially significant wetlands and headwater drainage features, or that propose a reduction in the minimum setback to such features;
    - That might affect natural vegetation communities or plant and wildlife species dependent upon groundwater discharge; and,
    - That might affect natural vegetation communities or plant and wildlife species dependent upon permanent or seasonal surface water supply.

- Such a description will always be accompanied by a description of soils and geology (see Section 2.2 above).
- Information on fish and fish habitat may be available from City or Conservation Authority staff or documents.

2.4 Vegetation Cover
(EIS Guidelines, Section 3.2.4)

- All vegetation community types on the subject site and in the affected surrounding area must be included on the map of the natural environment (see Section 2.1 above). Mapped communities must be clearly labelled to make it easy to match the description provided with the appropriate community on the map.
- A description of the vegetation communities, including (where known) the most common species of trees, shrubs and/or groundcover for each community is required. For example: Woods – sugar maple, ash, white pine over poison ivy and wildflowers; Old field – long grass, Queen Anne's lace, clover and milkweed.
- The locations of any significant woodlands should be shown on the map of the natural environment.
- See also Section 2.6 below regarding the potential occurrence of species at risk.
- If a TCR is required under the City of Ottawa's Tree Protection By-Law, it should be included with this EIS. Refer to the TCR Guidelines in Schedule E of the Tree Protection By-law for additional information (Tree Protection (By-law No. 2020-340) | City of Ottawa).

2.5 Wildlife
(EIS Guidelines, Section 3.2.5)

- Incidental observations of wildlife in the vicinity of the property should be described. "Wildlife" may include birds, mammals, reptiles, amphibians or invertebrates such as insects and molluscs. Fish should be included under Section 2.3 above.
- See also Section 2.6 below regarding the potential occurrence of species at risk.

2.6 Habitat for Species At Risk
(EIS Guidelines, Section 3.2.6)

- The City of Ottawa maintains a list of species at risk known or expected to occur in the city. Staff will inform you if any of these species could potentially be present on or adjacent to your property. The presence of species at risk may mean that you need a professional biologist to assist you with the preparation of your EIS.
- A map of habitat for species at risk will be required if the development site or the affected surrounding area contains species at risk or habitat for species at risk, meaning any species listed under the federal *Species at Risk Act* or the Ontario *Endangered Species Act, 2007* and its regulations.
- The general map of the natural environment may also serve as the map of habitat for species at risk, if the scale and resolution allow precise depiction of species' locations and habitats, and provided that the publication of this map is not restricted by the Ministry of Environment, Conservation and Parks for the protection of the species.

3. DESCRIPTION OF THE PROPOSED PROJECT

(EIS Guidelines, Section 3.3)

- In this section, you will provide information about your proposed project.
- You may attach as much information to this form as needed.
- The description must include a brief summary of any site preparation activities, construction activities, required servicing or utilities, landscaping plans, and activities associated with anticipated future uses of the site.
- The description may consist of materials prepared for other purposes, including the associated development application form.
- If you do not know the answer to a question, please enter "unknown." City staff may be able to assist you in answering the question during their review of the development application and EIS.
- The description must be accompanied by a plan showing the proposed development or site alteration overlaid on the map of the natural environment. The proposed plan must show all identified environmental constraints.
- Refer to the TCR Guidelines in Schedule E of the Tree Protection By-law for additional specifications regarding information and mapping requirements (Tree Protection (By-law No. 2020-340) | City of Ottawa).
- The use of actual concept plans, development plans, site plans or other figures is strongly encouraged.

4. IMPACTS AND MITIGATION

(EIS Guidelines, Sections 3.4 and 3.5)

- In this section, you will identify how your proposed project could impact the natural environment, and what mitigation measures will be used to avoid or reduce any negative impacts.
- The purpose of this EIS is to demonstrate how your project will be accomplished with no negative impact on any significant natural features or their ecological functions, as required by the Provincial Policy Statement. **Projects that cannot meet this requirement may not be approved**.
- Not all impacts are negative. In some cases, the use of mitigation measures such as restoration or enhancement of natural habitat areas, or removal of invasive non-native vegetation, may result in a net benefit to the natural environment.
- Negative impacts can often be avoided by locating your development away from any significant natural features, especially if you keep or create a buffer of natural vegetation between the feature and your project area.
- The City of Ottawa has established some standard mitigation measures for use in specific circumstances. These mitigation requirements are identified in Appendix 9 of the EIS Guidelines.
- More examples of potential impacts and mitigation measures are provided in the provincial Natural Heritage Reference Manual (MNR, 2010) which can be accessed online at https://www.ontario.ca/document/natural-heritage-reference-manual

Appendix 2: Environmental Impact Study (EIS) Decision Tool

The following questions are designed to assist in determining whether an EIS is required to support a *Planning Act* application. Staff may also require an EIS to support proposed site alteration within the area shown on Schedule B of the Site Alteration By-law, if working within 30 metres of any designated Natural Environment Area or Urban Natural Features, or any natural heritage feature identified on the City's Natural Heritage Overlay (Schedule C11 of the Official Plan).

Provided that best management practices are followed, an environmental impact study is not required within existing parks for the improvement, renewal and operation of current or new park facilities and amenities, outside of natural heritage features.

PART A – EIS TRIGGER

1(a). Is the subject property located in or within 120 metres of any of the following? Check all that apply:

- ☐ Natural Heritage System Core or Linkage Area (as designated on Schedule C11 of the Official Plan; refer to Section 5.6.4 of the Official Plan)
- ☐ Significant Wetland (as designated on Schedules C11 or C12 of the Official Plan, OR as identified by the Ministry of Natural Resources and Forestry; refer to Section 7.3(2) of the Official Plan)
- ☐ Natural Environment Area or Conservation Area designated on Schedule C11 (refer to Section 7.3(3) or 7.3(4 and 5) of the Official Plan)
- ☐ Known or potential habitat for an endangered or threatened species (as identified through consultation with City of Ottawa staff or other sources)

YES: Development potential within any of these features is limited (refer to the relevant sections of the Official Plan for permitted uses). An EIS is required for all permitted development within 120 metres of the feature.

Continue to 1(b), 2, 3 and 4 below to determine whether any additional EIS triggers are present, then proceed to Part B – Type of EIS to determine whether a Minor or Detailed EIS is required.

OR

☐ 1(b). Is the subject property located in or within 30 metres of an Urban Natural Feature, Conservation Area, Greenbelt Natural Area or Greenbelt Natural Link designated on Schedule C12 of the Official Plan?

YES: Development potential within any of these features is limited (refer to Section 7.3.1, 7.3.4 or 8.1 of the Official Plan for permitted uses). An EIS is required for all permitted development or site alteration in or within 30 metres of these features.

If none of the above apply, proceed to 2 below.

2(a). Is the subject property located in or within:

- ☐ 30 metres of a surface water or groundwater feature; and/or,
- ☐ 50 metres of an Earth Science Area of Natural and Scientific Interest (as shown on Schedule C11)?

2(b). Is the subject property located in or within 30 metres (in the urban area) or 120 metres (in the rural area) of any of the following natural heritage features? Check all that apply:

- ☐ Significant woodlands
- ☐ Significant valleylands (i.e., natural valleys with slopes greater than 15 per cent and lengths over 50 metres)
- ☐ Significant wildlife habitat (including escarpments)
- ☐ Life Science Areas of Natural and Scientific Interest
- ☐ Natural linkages and corridors

YES: If any of the conditions listed in 2(a) or (b) apply, an EIS is required to ensure that the proposed development or site alteration does not result in negative impacts to the natural features or their ecological functions. Continue to 3 and 4 below, then proceed to Part B – Type of EIS to determine whether a Minor or Detailed EIS is required. *If none of the above apply, proceed to 3 below.*

☐3. Is the property subject to an EIS, based on recommendations made as part of a Council-approved subwatershed study, environmental management plan or other area planning study? If yes, continue to 4 below, then proceed to Part B to determine whether a Minor or Detailed EIS is required.

☐4. Is the property located within 100 metres of an area deemed high or extreme risk in the provincial wildfire hazard mapping or any forest community comprised of more than 50 per cent conifers by canopy area?

YES: the EIS must include a Wildland Fire Assessment, conducted in accordance with the provincial manual. The EIS must also demonstrate that any recommended mitigation does not result in negative impacts to any natural features or their ecological functions. Proceed to Part B – Type of EIS to determine whether a Minor or Detailed EIS is required.

If none of the conditions listed above apply, then no EIS is required by the City. Other studies may still be required under City policies or by-laws (e.g., Tree Conservation Report), or by other regulatory agencies such as Conservation Authorities under separate legislative processes.

PART B – TYPE OF EIS

The following types of project and situations are considered to have a relatively low risk of negative environmental impact, provided that all work is done in accordance with applicable regulations and industry standards:

- Single lot severance
- Construction of a single-detached dwelling and/or accessory buildings on an existing lot
- Minor site alteration
- Minor changes in existing land use, e.g., minor variance or zoning by-law amendment
- Other types of development or site alteration occurring over 100 metres away from the natural feature, which will not produce off-site impacts on the feature through servicing requirements or other related activities
- Other types of development or site alteration in established settlement areas where similar development or site alteration has already occurred between the feature and the subject property

A Minor EIS will suffice for these projects. Proceed to Part C to determine whether the completion of the Minor EIS Form can be deferred or waived.

All other projects will normally require a Detailed EIS. Confirm study requirements with City staff and proceed with EIS.

PART C – WHEN TO DEFER OR WAIVE A MINOR EIS

The City's environmental planner may elect to defer or waive the requirement for an applicant to submit the Minor EIS Form in cases where they are satisfied that (a) the Minor EIS would be more appropriately conducted at a later date, or (b) the risk of negative impacts occurring as a result of the proposed project is extremely low to non-existent, such that the completion of the Minor EIS Form would not afford any useful benefit to the environment, the applicant or the City.

Circumstances that may warrant deferral of the Minor EIS Form include:

- Single lot severances where the lot to be severed is already developed and/or is located outside the adjacency distance to the natural feature(s), and the EIS would be more appropriately conducted to support the future development of the retained parcel.
- Minor changes in land use, provided that the EIS is conducted prior to any physical changes to the property.

In cases where the completion of the Minor EIS Form is deferred, the environmental planner will work with the file lead planner to ensure that the requirement for the Minor EIS is appropriately documented and applied in future (e.g., as a condition of approval, development agreement, holding zone, etc.).

Circumstances that may warrant waiving of the Minor EIS Form include:

- Minor developments (i.e., single lot severance, construction of a single-detached dwelling and/or accessory buildings on an existing lot, minor site alteration or minor changes in existing land use) where the development site is located outside the adjacency distance to the natural feature(s) that triggered the EIS requirement, or the feature(s) are located adjacent to, not on, the subject property.
- Single lot severances where the lot to be severed is already developed and/or is located outside the adjacency distance to the natural feature(s), and the retained parcel is either already developed or will be prohibited from development in future through conditions of severance (e.g., agricultural severances).
- Minor changes in existing land use that will not result in any significant physical changes to the property.

In cases where the completion of the Minor EIS Form is waived, the environmental planner's review of the proposal will constitute the Minor EIS. Their decision to waive the completion of the form will be documented in meeting notes, with supporting rationale and any required mitigation measures as determined by staff. Mitigation measures may be imposed through conditions of approval or development agreements as appropriate.

Otherwise, confirm study requirements with City staff and complete the Minor EIS Form accordingly.

Appendix 3: Agency Contact List

Agency	Staff Contact(s)	Telephone	Information/Authority on:
City of Ottawa	Planner	(613) 580-2424	Development application review process
	Environmental Planner	(613) 580-2424	EIS and other municipal environmental policies
	Forester-Planning	(613) 580-2424	Tree Conservation Report and urban tree removal
Conservation Authority – usually only one will be involved in any given application	Mississippi Valley Rideau Valley South Nation	(613) 253-0006 (613) 692-3571 (613) 984-2948	Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation
Fisheries and Oceans Canada	Fish and Fish Habitat Protection Program (Ontario)	1-855-852-8320 FisheriesProtection@dfo-mpo.gc.ca	Fish and fish habitat issues
Ministry of Environment, Conservation and Parks	Management Biologist	SAROntario@ontario.ca	Provincially protected species at risk (occurrence data, habitat information, advice and applications for permits under the *Endangered Species Act, 2007).*
Ministry of Natural Resources and Forestry (Kemptville District office)	Management Biologist	(613) 258-8204 (main office)	Wetlands; Areas of Natural and Scientific Interest; significant wildlife habitat.

Appendix 4: City of Ottawa Data Availability and Data Requests

Data available from the City will include:

- Aerial photography (latest available; earlier photos may also be available upon request, depending on location)
- Official Plan land-use designations
- Comprehensive Zoning By-law
- Roads and pathways
- Soils, including hydrologic soil groups
- Surficial geology
- Depth of overburden/drift
- Bedrock types
- Physiographic information
- Surface water quality
- Water wells
- Stream network and municipal drains
- Waterbodies / watercourses
- Evaluated wetlands
- Unevaluated wetlands (City of Ottawa mapping)
- ANSIs
- Vegetation polygons (note that these high-level polygons provide background information only, and do not replace ELC field studies)
- Forest canopy cover mapping
- Significant woodlands mapping
- Significant valleylands mapping
- Natural Heritage System (cores and linkages) mapping
- Species at Risk occurrence data (from NHIC, in accordance with data sensitivity restrictions)
- Provincial wildland fire hazard mapping
- City of Ottawa and National Capital Commission. 2020. Climate Projections for the National Capital Region.
- Flood plain mapping*

** Regulatory flood plain mapping should be obtained from the appropriate Conservation Authority, along with other regulation limits. Climate related flood vulnerable area mapping may also be obtained from the Conservation Authority.*

Some of this information can be obtained via the City's Open Data portal. Otherwise, a data license may need to be signed by the recipient of the data (either the applicant or their consultant). A fee may be administered to cover reproduction and distribution costs.

For further information, or to make a data request for digital information, please contact the City planner for the development application file.

Information on NESS areas (RMOC, 1997), Urban Natural Areas (City of Ottawa, 2006) and environmental planning studies (e.g., subwatershed studies, environmental management plans) is also available from planning staff.

Appendix 5: Natural Heritage Features, Values and Functions to be addressed during an EIS

In addition to the values and functions described below, any features lying within or adjacent to the City's Natural Heritage System of core natural areas and natural linkage areas must also be assessed for their current and potential contributions to that system.

Natural Heritage Feature	Values and Functions to be addressed in the EIS
Significant Wetlands Identified based on evaluations submitted in accordance with the Ontario Wetland Evaluation System. Designated in the Official Plan (see Schedules C11 and C12).	As identified in the official Wetland Evaluation record: • Biodiversity; • Hydrology; • Social and economic; and, • Special features.
Habitat for endangered and threatened species Defined in accordance with provincial regulations or guidance.	Where this habitat has not been defined by regulation under the *Endangered Species Act*, *2007* or through other approved studies, the EIS should use the process outlined in Section 5 of the Natural Heritage Reference Manual (MNR, 2010) or its successor to identify and delineate any habitat.
Significant woodlands Any treed area meeting the definition of woodlands in the *Forestry Act*, R.S.O.1990. c F.26 or forest in the Ecological Land Classification for Southern Ontario that: i. In the rural area, meets any one of the criteria in the Natural Heritage Reference Manual, as applied in accordance with the City's Significant Woodlands guidelines; ii. In the urban area, any area 0.8 hectares in size or larger, supporting woodland 60 years of age and older at the time of evaluation.	The values and functions responsible for identification of the woodland as significant. Refer to the City's Significant Woodlands guidelines and Section 7 of the Natural Heritage Reference Manual (MNR, 2010) or its successor for more information on the assessment and protection of significant woodlands.

Natural Heritage Feature	Values and Functions to be addressed in the EIS
Significant valleylands Defined as valleylands with slopes greater than 15 per cent and a length of more than 50 metres, with water present for some period of the year, excluding man-made features such as pits and quarries.	The values and functions of the identified feature, including but not limited to: • Surface water functions; • Groundwater functions; • Fisheries protection; • Wildlife habitat; • Natural vegetation communities or potential for restoration of natural communities; • Prominent or unique landforms; • Natural landscape connectivity; and, • Recreational functions. Section 8 of the Natural Heritage Reference Manual (MNR, 2010) or its successor provides additional information on the protection of significant valleylands.
Significant wildlife habitat Includes escarpments (slopes exceeding 75 per cent and height greater than 3 metres); otherwise as identified in accordance with Provincial SWH Criteria for Ecoregion 6E.	The values and functions normally associated with significant wildlife habitat, as determined using the process outlined in Section 9 of the Natural Heritage Reference Manual (MNR, 2010) or its successor.
Areas of Natural and Scientific Interest Identified by the Province.	Earth Science: The values and functions responsible for recognition of the area as significant, including: • Specific features and functions (e.g. fossils, sinkholes, etc.); and, • Associated features, landforms or other characteristics within the ANSI and adjacent area that provide context and meaning for the understanding and interpretation of the ANSI. Life Science: The values and functions responsible for recognition of the area as significant, including: • Specific features and functions (e.g. rare/uncommon communities, ecological processes, etc.); and, • Associated features, landforms or other characteristics within the ANSI and adjacent area that provide context and meaning for the understanding and interpretation of the ANSI.

Natural Heritage Feature	Values and Functions to be addressed in the EIS
Urban Natural Features Designated in the Official Plan (see Schedule C12).	Each one of the nine evaluation criteria that received a rating of moderate or greater during the assessment of the feature as part of the Urban Natural Areas Environmental Evaluation Study (City of Ottawa, 2006): • Connectivity; • Absence of disturbance; • Habitat maturity; • Natural communities; • Regeneration; • Representative flora; • Significant flora and fauna; • Size and shape; and, • Wildlife habitat.
Natural Environment Areas and equivalent designations (i.e., Conservation Areas, Greenbelt Natural Areas, Greenbelt Natural Linkages) Designated in the Official Plan (see Schedules C11 and C12).	Where the Natural Environment Area includes a candidate or confirmed ANSI, the values and functions responsible for recognition of the area as significant (see Earth Science/Life Science ANSI values and functions above). Each one of the eight evaluation criteria that received a rating of moderate or greater during the assessment of the area as part of the Natural Environment System Strategy (RMOC, 1997): • Landscape attributes; • Common vegetation community/landform representation; • Rare vegetation/landform representation; • Endangered, threatened, and rare species; • Vegetation community/landform diversity; • Seasonal wildlife concentrations; • Hydrological features; and, • Condition of natural area. For Conservation Areas or Greenbelt features, the assessment should also consider the values and functions identified by the applicable agency's regulations and/or policy documents (e.g., Greenbelt Master Plan).
Natural linkage features and corridors These are local features, not to be confused with the NHS Natural Linkages identified on Schedule C11. Defined as forest remnants and natural corridors such as	The value and function of the linkage feature for maintaining the identified values and functions of the features that it connects.

Natural Heritage Feature	Values and Functions to be addressed in the EIS
flood plains that are identified through planning or environmental studies as linkages between significant features, but that may not meet the criteria for significance in their own right.	
Groundwater features Water-related features in the earth's subsurface, including recharge/discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrogeologic investigations.	In addition to any required assessment of the feature with respect to source water protection and groundwater protection, the role of the groundwater feature for supporting and maintaining the functions of any related natural heritage features must be evaluated.
Surface water features, including fish habitat Water-related features on the earth's surface, including headwater drainage features, rivers, stream channels, drains, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics. Fish habitat as defined in the *Fisheries Act*, means spawning grounds and any other areas, including nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes.	The values and functions of the surface water feature, including but not limited to: • Hydrological functions; • Riparian conditions; • Aquatic habitat, especially fish and fish habitat; • Supporting and supported terrestrial habitat; • Natural heritage linkage functions, local and city-wide; • The long-term stability of stream channels and banks, especially in relation to impacts from development and associated infrastructure. For wetlands, the values and functions to be addressed will also include: • Habitat for species at risk; • Provision of wildlife habitat, especially for species dependent upon both wetland and forest habitat during their life cycles (e.g. amphibians, cavity-nesting waterfowl, etc.); and, • Support of uncommon or rare vegetation communities. The EIS author should consider, in consultation with City staff, whether a wetland evaluation is warranted to ensure that potentially significant wetlands are not negatively impacted. The EIS should identify whether a review or

Natural Heritage Feature	Values and Functions to be addressed in the EIS
	authorization under the *Fisheries Act* is likely to be required. Cumulative impacts are particularly important in the assessment of surface water features.
Landform features Geomorphic, geological and other landform features that are distinctive to Ottawa.	The educational, scientific and landscape values for which the feature was identified. Many of these features were described in *Geological Sites and Features in the Regional Municipality of Ottawa-Carleton* (1975) undertaken in partnership with the Ministry of Natural Resources.

Appendix 6: Preliminary Environmental Data Collection Checklist

Date Completed:	
Property ID (address):	
Applicant or Agent:	
City Staff Representative(s):	

Type of EIS Required (Circle): Minor Detailed

Detailed Terms of Reference Required for Approval (Circle): Yes No

NOTE: for the following table, check (√) all boxes that apply to this EIS. Cross out (X) boxes that do not apply. Note any specifications regarding field study timing or methods (either in box or as a numbered endnote following the table). Decisions made during pre-consultation may be revisited at any time during the EIS preparation or review process as new information becomes available.

Feature	Data Required	Background Information	Field Study (EIS or other)	Optimal Inventory Period	Detailed Field Study Specifications
Location of subject lands in relation to natural heritage feature(s)	√	Natural heritage mapping, other information from City or MNRF staff	Confirm, map and describe all natural heritage features	Dependent on natural feature or function identified	
Inventory of existing man-made structures	Include on map	Survey or aerial photo		N/A	
Soil types by texture/grain size and drainage characteristics		Soils mapping, borehole data or other previous study			ELC methodology; may require hydraulic conductivity to assess infiltration
Overburden and bedrock geology		Borehole data	Borehole (usually other study)		
Locations and usage of any existing wells		MECP well records	Water sampling or pumping test (usually other study)		
Areas of high water table		Borehole data	Borehole (usually other study)		

Feature	Data Required	Background Information	Field Study (EIS or other)	Optimal Inventory Period	Detailed Field Study Specifications
Areas of groundwater recharge and discharge		Subwatershed study/ Source Water Protection mapping			
Drainage patterns, basin boundaries and watercourses	Include intermittent/ ephemeral features	Subwatershed study mapping			
Fish and fish habitat		Previous studies, CA or MNRF mapping		Late April to October	
Fish species at risk (specify):	√	DFO; NHIC; previous field studies	Search areas of suitable habitat	Will vary depending on species	
Benthic invertebrates		Previous studies		Spring or fall	Use Ontario Stream Assessment Protocol; Ontario Benthos Biomonitoring Network Protocol
Existing erosion sites		Previous studies			
Areas of shallow soil		Previous studies / borehole data			
Description of vegetation communities	√	Acceptable if completed within previous 5 years		Mid-May to mid-September	Use ELC methodology, classified to "vegetation type" level
Presence of hazardous forest types for wildland fire within 100 m	√	Provincial wildland fire risk mapping; ELC mapping	Confirm, describe and map any extreme or high hazardous forest types		Use provincial methodology
Assessment of vegetation condition: successional state, disturbance, extent of invasive species	√			May to September	

Feature	Data Required	Background Information	Field Study (EIS or other)	Optimal Inventory Period	Detailed Field Study Specifications
Vascular plant species	√	NESS or UNAEES; previous field studies		Spring ephemerals: early to mid-May; Woodland sedges: mid-May to early July; Forbs: June to mid-Sept.	Detailed three-season botanical inventory
Plant species at risk (specify):	√	MECP; NHIC; NESS or UNAEES; previous field studies	Search areas of suitable habitat	Will vary depending on species; during growing season	
Bird species	√	Ontario Breeding Bird Atlas; previous field studies		Raptor nests: April; Other breeding birds: twice between May 24 to July 10; Migrants and over-wintering birds: will vary	Follow Ontario Breeding Bird Atlas protocol
Amphibian species	√	Ontario Herpetofaunal Atlas; previous field studies		Salamanders: May to June; Frogs/toads: early spring to mid-summer	Marsh Monitoring Program protocol (Frogs/toads)
Reptile species	√	Ontario Herpetofaunal Atlas; previous field studies		April through September (species dependent)	Active searching
Mammal species	√	Atlas of the Mammals of Ontario; previous field studies		Species dependent	Sightings, tracks or other evidence
Insect species		Ontario Odonata Atlas		Odonates and lepidopterans: June and July	
Wildlife species at risk (specify):	√	MECP; NHIC; atlas records or previous field studies	Search areas of suitable habitat	Will vary depending on species	

City staff will make a copy of this form, once completed, and provide it to the applicant or agent for their files. City staff will retain the original form.

Appendix 7: Data Collection and Reporting Standards

The EIS report must include a fieldwork summary table including date and time of all site visits, personnel involved (names and qualifications), weather conditions (where relevant, include air temperature, cloud cover, Beaufort wind speed, and precipitation) and purpose of each visit.

The significance of species and vegetation communities observed or reported should be verified using the following sources of status information:

- Species at risk public registry - Canada.ca;
- Ontario Regulation 230/08 Species at Risk in Ontario (SARO) List (O. Reg. 230/08: SPECIES AT RISK IN ONTARIO LIST);
- The Natural Heritage Information Centre (Get natural heritage information | Ontario.ca) has lists of vegetation communities, plant and wildlife species with their status in Ontario; and,
- Vascular Plants of the City of Ottawa, with Identification of Significant Species (Brunton, 2005; Appendix A of the Urban Natural Areas Environmental Evaluation Study).

Surface Water Features and Fish Habitat

The Ontario Stream Assessment Protocol (OSAP) includes standard methods of surveying the physical conditions and biological communities of watercourses, which can be used to assess and describe most commonly encountered types of surface water features. For wetland features, refer to Wetland Evaluation and/or Ecological Land Classification below. The determination of which module(s) of the protocol should apply to a given site will be made during pre-consultation, with input from the applicable Conservation Authority. Detailed field surveys may not be required in cases where impacts are deemed unlikely to occur based on the project's distance from the feature or other mitigating circumstances.

OSAP methods include fish and benthic macro-invertebrate community surveys. Benthic surveys are rarely required for an EIS but may be useful in cases where species at risk are suspected of being present, or where a detailed examination of the aquatic health of the water feature is warranted. Fish sampling may be required in cases where species at risk are suspected, or where fish habitat is likely to be affected and background information is limited or out of date. Any fish sampling must be carried out in compliance with applicable legislation (i.e., a provincial permit is required).

For more information on OSAP, including access to the current manual and field data forms as well as training videos, refer to: Ontario Stream Assessment Protocol (OSAP) – Toronto and Region Conservation Authority (TRCA).

Where headwater drainage features are involved, the guidelines developed by the Credit Valley and Toronto Region Conservation Authorities for the evaluation, classification and management of such features should be followed. These guidelines are available at TRCA.CA|HDF_Guidelines.

Wetland Evaluation

Where a wetland evaluation or re-evaluation is required, it must be conducted by a qualified wetland evaluator using the current Southern Ontario Wetland Evaluation System manual. The completed wetland evaluation must be submitted to the City for review and approval. The results of the evaluation, once approved, must be provided to the MNRF along with the wetland mapping, for incorporation into the provincial geodatabase.

Similarly, where a boundary revision is proposed for an evaluated wetland, any such revision must be identified and recommended by a qualified wetland evaluator. The City must review and approve the revision to the wetland mapping before it is submitted to the MNRF.

For more information on the provincial wetland evaluation system, or to access the current Southern OWES manual, refer to: Wetlands evaluation | Ontario.ca

Ecological Land Classification

Community descriptions for Detailed EIS reports must follow the nomenclature outlined in the Ecological Land Classification for Southern Ontario (Lee et al., 1998) to Vegetation Community Type.

The description of vegetation communities required in a Detailed EIS will include:

- A written description of each ELC vegetation type identified, outlining the dominant plant species within the overstorey, shrub layer, and ground flora of **each** ELC vegetation type;
- The location and “element ranking” of each provincially significant ELC vegetation type identified (see NHIC website); and,
- A summary of disturbances in each ELC vegetation type, including the descriptions of intensity and extent included in the ELC methodology.

Any forest types associated with a high or extreme wildland fire hazard within 100 metres of the project must be identified and described in sufficient detail to allow a risk assessment in accordance with the provincial Wildland Fire Risk Assessment and Mitigation Reference Manual.

The need for a comprehensive evaluation of the site, using the full ELC methodology, will be determined during pre-consultation. Under this comprehensive protocol, the survey of vegetation community types should be undertaken over three seasons (spring to fall), although exceptions may be determined during pre-consultation.

Vascular Plant Inventory

Although the need for detailed vascular plant inventories will be established during pre-consultation, in general, a list of all vascular plants observed during the field investigations on the site should be compiled. Because some species may be identifiable only for a short period, the timing of surveys for specific vascular plants (i.e., species at risk known or suspected to occur in the area) may be specified at the pre-consultation stage. If previous site-specific inventories have been undertaken (e.g., UNA or NESS studies, etc.) this information should be incorporated into the vascular plant list, with notations indicating which species were directly observed and which were reported but not seen. The sources of all such background species reports should be clearly identified.

The vascular plant inventory required in a Detailed EIS will include:

- An appendix list of vascular plant species observed or reported on the site, including scientific and common names, with an indication of the relative abundance of each species on the property (e.g., common, uncommon, rare);
- The status, as of the date of the report, of all species at risk under provincial and federal legislation;
- The regional status of each vascular plant species, as assigned by Brunton (2005); and,
- Specific locations of each species of conservation concern (e.g., national, provincial, or regional, see below), mapped with their ELC vegetation communities (subject to restrictions on publication when required by MECP for the protection of species at risk).

Species of national conservation concern are those designated as nationally at-risk, and are listed on the federal SARA registry website. Provincial species that should be identified include all species at risk (see SARO list) as well as those of element ranks S1-S3, tracked by the NHIC. Species of regional conservation concern are those identified as regionally significant (RS) by Brunton (2005). Where practical, approximate population sizes of all provincially tracked species should also be recorded and submitted to City staff and to the Natural Heritage Information Centre.

Faunal Inventories

Incidental observations of wildlife and habitat features such as nests, hollow trees or other potential den sites should always be included in an EIS (Minor or Detailed). Specific field surveys for various taxonomic groups (i.e., birds, amphibians, reptiles, mammals or insects) may also be required. Standard survey methodologies for these groups are described below. While timing windows are specified in some cases, they should be considered as guidelines given that optimal survey conditions may actually occur outside these specific windows in some years (e.g., where spring weather arrives earlier or later than usual).

Fish and benthic macro-invertebrate surveys are addressed in the section on Surface Water Features and Fish Habitat, above (see information on OSAP).

Breeding Bird Surveys

A list of breeding birds for the City of Ottawa has been generated using data from the Ontario Breeding Bird Atlas (1987 and 2005), Natural Heritage Information Centre, Species at Risk Act Public Registry and Species at Risk in Ontario range mapping. This list, along with current species status, observed population trends and known habitat preferences, is available at: Species List | City of Ottawa.

Surveys of breeding birds should follow the Ontario Breeding Bird Atlas protocol (OBBA, 2020), including both point counts and incidental observations. The following are general guidelines:

- Point counts should be undertaken for five-minute intervals;

- Representative locations in different habitats around the site should be selected for point count surveys[1];
- Point count locations should be 300 metres apart to prevent duplicate counts; however, smaller intervals (minimum 100 metres) may be required to cover the range of habitats on smaller sites;
- Incidental site observations should also be recorded;
- The highest breeding status observed should be reported for each bird species recorded from the site (see Appendix 7.1 for the list of codes); and,
- At least two site visits must be completed between May 24 and July 10, with all initial visits completed by the third week in June.

Surveys should be completed during appropriate weather conditions, and should start around **half an hour before sunrise** and **end by midday**. Surveyors must be able to identify most eastern Ontario birds by song.

During pre-consultation, it may be determined that an additional site visit will be required in April, in order to survey for breeding owls, raptors, or other early nesting species.

The EIS should include:

- An assessment of the relative abundance and breeding status (confirmed, probable, or possible) of each bird species found on the site; and,
- Mapped locations of all breeding bird point counts.

Amphibian Surveys

A list of amphibians for the City of Ottawa has been generated using data from the Ontario Herpetofaunal Summary Atlas (Oldham and Weller, 2000), the Reptiles and Amphibians of Ontario (Ontario Nature, 2010), the Natural Heritage Information Centre, Species at Risk Act Public Registry and Species at Risk in Ontario range mapping. This list, along with current species status, is available at: Herpetofauna - Reptiles and Amphibians | City of Ottawa.

The requirement to complete amphibian surveys will be dependent on the presence of suitable habitat at the site. The species list in the EIS report should include an indication of their relative abundance (including call codes for surveys of breeding frogs and toads). Locations of suitable or confirmed amphibian breeding habitat should be mapped.

Salamanders

The optimal time to survey for salamander presence is on rainy spring nights after the ground is fully thawed (May-June). As a minimum, opportunistic surveys should be undertaken by lifting dead wood and rocks in wooded areas.

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[1] Point counts and nocturnal surveys should include “cultural” habitats such as meadows and thickets, and not focus exclusively on woodlands and/or wetlands. This is to identify open-country birds that may be of conservation significance (e.g., bobolink, short-eared owl, common nighthawk, etc.).

Woodland pools (permanent or ephemeral) may be critical for the breeding stages of many amphibians. These areas may be considered significant wildlife habitat (see Appendix 8). Where vernal pools are present, more detailed site assessment may be required. For example, vernal pools may be searched for amphibian egg masses or larvae to confirm salamander presence.

Frogs and Toads

Surveys for frogs and toads (anurans) should generally follow the Marsh Monitoring Program protocol (Bird Studies Canada, 2003). In general, a minimum of three surveys should be conducted at least 15 days apart, with the first between April 15-30, the second between May 15-30, and the third between June 15-30, depending on night time air temperature (see below). Surveys are started a half-hour after sunset. Observers should also record all other fauna observed at the site. Surveyors must be able to identify all anurans in the Ottawa area by sound. Web-based information at www.frogwatch.ca may be helpful. Tape playback may be used to confirm presence.

	Early breeders	Middle breeders	Late breeders
Target species	Wood Frog Chorus Frog Spring Peeper	Northern Leopard Frog Pickerel Frog Mink Frog American Toad Grey Treefrog	Green Frog Bullfrog
Times	Mid-April to Mid-May	Mid-May to Mid-June	Mid-June to late July
Night time air temperature	Above 5ºC	Above 10ºC	Above 17ºC

Population abundances should be recorded using the following codes. Both call codes and abundance estimates should be recorded (e.g., Code 2, 5 individuals).

Code 1: only a few frogs present, calls do not overlap
Code 2: more frogs calling; calls start to overlap
Code 3: full chorus; calls strongly overlapping; number of individuals impossible to estimate.

Incidental observations of individuals found on the site during other times should also be included. However, these observations should be clearly distinguished from those of breeding individuals in the report.

Reptile Surveys

A list of reptiles for the City of Ottawa has been generated using data from the Ontario Herpetofaunal Summary Atlas (Oldham and Weller, 2000), the Reptiles and Amphibians of Ontario (Ontario Nature, 2010), the Natural Heritage Information Centre, Species at Risk Act Public Registry and Species at Risk in Ontario range mapping. This list, along with current species status, is available at: Herpetofauna - Reptiles and Amphibians | City of Ottawa.

Visual surveys for reptiles should occur at each site. Observations may consist of individual reptiles or other signs (e.g., shed skins, turtle shells, nests, hatched eggshells, etc.).

Visual surveys are best accomplished in a suitable season and weather conditions. Visual surveys for turtles should include looking for basking individuals on logs and rocks in spring or early fall. Similarly, many snakes bask in early spring, and seek cover later in the summer. Visual surveys for snakes are best completed on warm days in spring (mid-April to mid-June). Opportunistic searches for snakes under suitable cover such as logs, boards and other debris should also be undertaken.

All native species of turtle in Ontario, with the sole exception of the painted turtle, are now considered to be at risk. Where a reptile species at risk has been previously reported at or near the site, and there is concern that the proposed development may negatively impact its habitat, more intensive search methods may be necessary. Permits may be required for trapping surveys or other intrusive methods.

Mammal Surveys

A list of mammals for the City of Ottawa has been generated using data from the Atlas of the Mammals of Ontario (Dobbyn, 1994), the Natural Heritage Information Centre, Species at Risk Act Public Registry and Species at Risk in Ontario range mapping. This list, along with current species status, is available at: Species List | City of Ottawa.

Incidental mammal observations (i.e., sightings, tracks, scats, dens and other signs) should be made during each field visit. Because species have very different habits, there is no standard protocol for field observations. Tracking is usually best during winter (in fresh snow) or early spring (in soft ground) and may coincide with other fauna surveys. Observations of habitat types should be combined with local species occurrence data, where available, to determine which species are likely to be present. The Significant Wildlife Technical Guide (MNR, 2000) provides a useful summary of information on the habitat preferences and habits of Ontario mammals (see Appendix G, Table G-4 of that document, available at: Significant wildlife habitat technical guide | Ontario.ca).

Insect Surveys

Lists of butterflies and odonates for the City of Ottawa have been generated using data from the Butterflies of Canada (Layberry, 1998) and Layberry (2006), the Ontario Odonata Atlas (NHIC, 2005), the Natural Heritage Information Centre, Species at Risk Act Public Registry and Species at Risk in Ontario range mapping. These lists, along with current species status, are available at: Bugs | City of Ottawa.

Inventory of insects is optional for most EIS reports. However, if insect species at risk have been previously documented for a site, the need for a specialized survey may be identified at the pre-consultation stage.

Appendix 7.1: Breeding Bird Codes from Breeding Bird Atlas of Ontario

OBSERVED

X	Species observed in its breeding season (no breeding evidence)

POSSIBLE

H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

PROBABLE

P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker

CONFIRMED

NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

Appendix 8: Characteristics of Significant Wildlife Habitat

Much of Ottawa's significant wildlife habitat (e.g., seasonal concentration areas for wildlife, rare vegetation communities or specialized wildlife habitat, habitat for species of special concern or other species of conservation concern, and animal movement corridors) is found within other natural heritage features, such as Significant Wetlands, Natural Environment Areas, significant woodlands, significant valleylands and linkage features such as flood plains. Exceptions to this include the large expanses of migratory waterfowl staging habitat found in Ottawa's agricultural lands, and various escarpments not necessarily associated with designated areas like the Carp Hills and South March Highlands. Thus, for the most part, an EIS will not be triggered solely by the presence of significant wildlife habitat; however, the potential for significant wildlife habitat to be present in association with other natural heritage features should always be considered when preparing an EIS.

Within the City of Ottawa, escarpments with slopes exceeding 75 per cent and heights greater than 3 metres have been identified as significant wildlife habitat because they frequently support rare vegetation communities (i.e., cliff and talus slopes) and may provide habitats for seasonal concentrations of animals (i.e., hibernacula). Escarpments meeting these criteria are included in the Natural Heritage Features overlay.

Although the MNRF has some seasonal concentration areas mapped (e.g., migratory waterfowl staging areas, deer yards, fish spawning and nursery sites), most significant wildlife habitat cannot be confirmed and mapped remotely, and must be identified during a field visit. The presence, characteristics and extent of any areas of significant wildlife habitat must be described and mapped as part of the EIS. To identify significant wildlife habitat, consultants should follow the provincial guidance provided in the Significant Wildlife Habitat Technical Guidelines (MNR, 2000), the Natural Heritage Reference Manual (MNR, 2010) and the MNRF's schedule of significant wildlife habitat criteria for Ecoregion 6E (available at http://www.ontario.ca/document/significant-wildlife-habitat-ecoregional-criteria-schedules-ecoregion-6e) or their successors.

Examples of features considered to be significant wildlife habitat include:

- Habitats of seasonal concentrations of animals (e.g., colonial bird nesting sites such as heronries and gull colonies, winter feeding and roosting areas for raptors, migratory bird staging and stop-over areas, bat or reptile hibernacula, amphibian breeding areas in woods or wetlands, etc.);
- Rare vegetation communities (e.g., alvars, old growth forests, sand barrens, cliff and talus slopes);
- Animal movement corridors;
- Specialized wildlife habitat (e.g., nesting sites for waterfowl or raptors, turtle nesting or overwintering habitat, seeps and springs); and,
- Significant habitat for species of conservation concern (e.g., provincial species of special concern listed under ESA, 2007; species listed under SARA which are not also listed as endangered or threatened under ESA, 2007; species which are ranked by the Natural Heritage Information Centre as S1-S3 in Ontario).

Appendix 9: Standard Mitigation Measures

The following mitigation measures will be required in any EIS that addresses potential impacts on the natural heritage features and ecological functions specified. The recommendations should be tailored to suit the individual project, but their intent and minimum level of protection must be maintained.

Natural Heritage Feature/Ecological Function	Potential Impact	Mitigation
Birds (particularly those protected under provincial or federal legislation, i.e., game birds, raptors, migratory birds and species at risk birds).	Loss of nests, eggs and/or young due to tree cutting or other clearing of vegetation. NOTE: the nests and eggs of many species are protected under federal and/or provincial legislation (i.e., *Migratory Birds Convention Act, Fish and Wildlife Conservation Act*)	• No clearing of vegetation between April 15 and August 15, unless a qualified biologist has determined that no nesting is occurring within 5 days prior to clearing. • A pre-clearing survey for active stick nests and cavity nests must also be conducted between April 1 and April 15, in order to identify and protect early-nesting owls and raptors. NOTE: these dates are based upon breeding bird nesting data for eastern Ontario, provided by Environment Canada. Nesting periods may vary based on habitat types, species, weather and climate patterns. Legal protections on birds and their nests apply regardless of calendar date, so caution should be applied when clearing vegetation in the weeks before and after this recommended window. For more information, refer to Environment Canada's web site at Avoiding harm to migratory birds - Canada.ca
Birds (particularly those protected under provincial or federal legislation, i.e., game birds, raptors, migratory birds and species at risk birds).	Increased mortality due to collisions with buildings and other structures.	The EIS will be expected to address how the proposed project will avoid or minimize risks to birds, in compliance with the City's Bird-Safe Design Guidelines. For plans of subdivision, this will include consideration of how to minimize risk to birds in natural areas / greenspaces through lot layout, as well as information to be included in owner awareness packages. For site plans, this will include detailed recommendations for site layout, exterior finishes, landscaping and lighting design. The EIS will be expected to describe how the

Natural Heritage Feature/Ecological Function	Potential Impact	Mitigation
		proposed design avoids or minimizes risks to birds, and what additional measures are needed to address any remaining risks (e.g., specifications for bird-safe glass, grates, light fixtures, etc.).
Butternut (federally and provincially endangered species)	Damage or loss due to tree cutting or site alteration activities (e.g., excavation, filling, grading).	• No tree cutting, clearing or site alteration allowed on sites where butternut may be present, unless a thorough search has confirmed that no butternut are located in or adjacent to the proposed work area. • A qualified professional will assess any butternut identified in or adjacent to the proposed work area, using provincial methodology to determine whether they are "retainable," i.e., sufficiently healthy to be protected under the ESA, 2007. • Retainable butternut will not be harmed or removed without authorization from the MECP. City of Ottawa permits for the removal of trees do not apply to butternut in the absence of the required authorization from MECP. • Habitat for butternut is generally defined as a minimum 50 metre radius around the trunk of each retainable butternut for which no authorization is obtained. Any encroachment within 25 metres of a retainable butternut must be supported by a prior written assessment by a qualified individual (a Registered Professional Forester or Professional Arborist) that this will not harm the tree. • Ensure that all protective measures identified in the approved TCR (included as part of the EIS) are in place prior to any vegetation removal or site alteration activities. Recommendations shall include limits on specific activities that could result in negative impacts to the retained butternut tree(s) and the associated habitat for the tree(s).
Fish and fish habitat	Sedimentation or other harm to fish and fish habitat	Avoid any in-water work during sensitive timing windows as identified by MNRF for Ottawa area:

Natural Heritage Feature/Ecological Function	Potential Impact	Mitigation
	during critical life stages from in-water work.	• Ottawa River October 1 to July 15 • Mississippi or Rideau Rivers January 1 to June 30 • All other waterbodies March 15 to June 30 Follow DFO standards / codes of practice where applicable: Standards and codes of practice (dfo-mpo.gc.ca)
Natural features (all)	Degradation resulting from increased recreational usage, illicit dumping and encroachment by residential landowners into natural areas and setbacks or buffers following development.	NOTE: these will vary depending upon the context (urban vs. rural) and the ownership of the natural feature (public vs. private). Recommendations regarding appropriate setback and buffer widths and compatible recreational uses are key products of the EIS. • Determine the appropriate setback distance between the proposed project and the natural feature, and preserve or establish a suitable buffer zone of natural vegetation within the setback. • Subdivisions should be designed to minimize the number of lots backing onto natural features. • Public paths should be located outside or along the edges of natural features to the extent possible. • Provide owner awareness package to all new residents, to encourage responsible stewardship of the natural feature. Potential topics could include: o Why the natural feature is valued and protected. o What lives there. o How to be a good neighbour. o Important legal information (e.g., by-laws regulating pets, property drainage, tree cutting, discharge to sewers, use of natural areas, etc.).
Natural features (all)	Loss of native biodiversity due to increased presence of non-native invasive species	• Use only locally appropriate native species for landscaping adjacent to natural features or buffer zones. • Re-establish native vegetation along new or disturbed edges of natural features by

Natural Heritage Feature/Ecological Function	Potential Impact	Mitigation
	after development.	seeding or transplanting locally appropriate native species. • Provide new homeowners with lists of locally appropriate native species for use in landscaping, along with information on the negative impacts of non-native invasive species such as Norway maple, Amur maple, periwinkle and other commonly cultivated species.
Species at Risk	Degradation or loss of habitat for species at risk not addressed as part of the EIS (due to subsequent changes in species status or other information).	• Federal and provincial lists of species at risk are periodically updated to reflect changes in species status. Occurrence data for these species is also subject to change. Therefore, the most current SAR information available must be reviewed in comparison with the EIS findings immediately prior to the commencement of on-site activities to confirm that all known SAR have been adequately addressed in the EIS.
Trees and woodlands	Accidental damage or loss of trees as a result of site alteration or construction activities.	Ensure that all protective measures identified in the approved TCR (included as part of the EIS) are in place prior to any vegetation removal or site alteration activities. Recommendations shall include limits on specific activities within the identified auxiliary root zone and primary root zone, as well as the following mandatory protection of the critical root zone: • Erect a fence at the outer limit of the critical root zone (CRZ) of trees to be retained, which is defined as the distance around the tree at a radius 10 times the diameter of the tree (at breast height); • Do not place any material or equipment within the CRZ of the tree; • Do not attach any signs, notices or posters to any tree; • Do not raise or lower the existing grade within the CRZ without approval; • Tunnel or bore when digging within the CRZ of a tree; • Do not damage the root system, trunk or

Natural Heritage Feature/Ecological Function	Potential Impact	Mitigation
		branches of any tree; • Ensure that exhaust fumes from all equipment are NOT directed towards any tree's canopy.
Trees and woodlands	Wildland fire hazard mitigation	The EIS will be expected to demonstrate how wildland fire hazards can be mitigated (e.g., through vegetation management) without negatively impacting natural heritage features and functions, in accordance with the provincial reference manual.
Wildlife (all)	Displacement, injury or death of wildlife as a result of vegetation clearing and other activities associated with site alteration or development.	The EIS will be expected to identify any applicable sensitive times of the year for the site, and recommend appropriate mitigation measures to avoid or reduce impacts to wildlife, using the City's Protocol for Wildlife Protection during Construction.
Wildlife (all)	Ongoing conflicts between wildlife and humans or domestic pets following development of new homes in or adjacent to natural areas.	• Provide owner awareness package to all new residents, including information on avoiding and resolving human-wildlife conflicts, with references for more information (see Section 4 of the Protocol for Wildlife Protection during Construction for a list of resources). • Include information on potential consequences of allowing pets to roam unattended, such as: o Impacts of pets on wildlife o Impacts of wildlife on pets o Legal restrictions on uncontrolled pets (municipal and provincial).

Appendix 10: Setbacks to Surface Water Features

Setbacks and vegetated buffers are essential for the protection of surface water features and their ecological functions. Section 4.9.3 of the Official Plan provides policy direction to restrict or limit development and site alteration near surface water features, by establishing minimum setbacks. Where Council-approved subwatershed studies or other similar studies have not identified a setback, the Official Plan directs that the minimum setback shall be **the greater of** the following:

- Conservation Authority hazard limit, which includes the regulatory flood line, geotechnical hazard limit and meander belt;
- Geotechnical hazard limit identified using the City's Slope Stability Guidelines for Development Applications;
- 30 metres from the top of bank, or the maximum point to which water can rise within the channel before spilling across the adjacent land (bank full flow); and,
- 15 metres from the existing stable top of slope, where there is a defined valley slope / ravine.

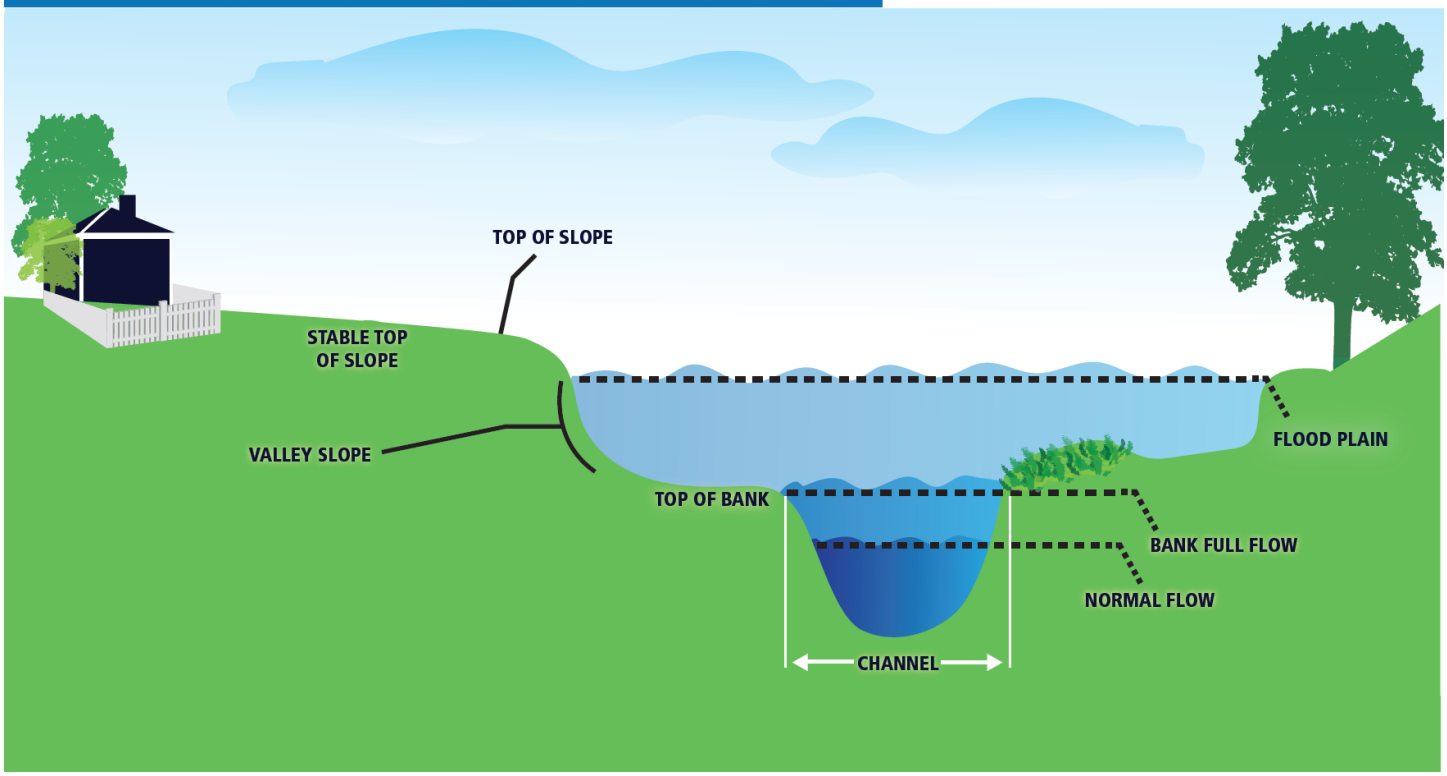
The defining or governing limit may vary along the length of the feature, so it is important to show all applicable limits when demonstrating how the minimum setback for the site was established. Legally defined work space requirements must also be considered when establishing setbacks along municipal drains.

The Official Plan further directs that lands within the minimum setback shall remain in a naturally vegetated condition, and that the vegetation shall be restored and enhanced to the greatest extent possible if it is disturbed by development or site alteration activities. Buffers of natural vegetation help to protect surface water quality through filtration and shading, provide wildlife habitat and support ecological functions.

Exceptions to minimum setbacks established using the "greater of" method above may be considered for headwater drainage features, non-significant wetlands, and in other specific circumstances as described in Section 4.9.3, policies 6, 7 and 8. Enhanced buffers may be required in cases where reduced setbacks are permitted.

The following figure, taken from the Official Plan, illustrates the various physical features involved in establishing a minimum setback. In cases where these landmarks are not present or apparent (e.g., headwater drainage features) the EIS must clearly describe how the recommended setback is to be measured. For wetlands without a defined top of bank or hazard limit, the setback shall be measured from the edge of the wetland as determined either through the Ontario Wetland Evaluation System methodology or Ecological Land Classification mapping.

SETBACKS FROM SURFACE WATER FEATURES



Key terms are defined either in the Provincial Policy Statement or in Section 13 of the Official Plan. Terms defined in the Official Plan are presented here:

Headwater drainage features:

Non-permanently flowing drainage features that may not have defined bed or banks, first-order and zero-order intermittent and ephemeral channels, swales and connected headwater wetlands, not including rills or furrows.

Stable top of slope:

The physical top of slope where the existing slope is stable and not impacted by toe erosion as determined by a qualified professional.

Surface water features:

Water-related features on the earth's surface, including headwater drainage features, rivers, stream channels, drains, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics, including fish habitat.

Top of bank:

The maximum point to which water can rise within the channel before spilling across the adjacent land, also referred to as bank full flow. In places where the channel is confined by a valley on one or both sides, the top of bank can be inferred through upstream or downstream areas where the channel is well defined or through changes in vegetation, colour and/or surface markings.