Introduction

Recreational trail use within parks and natural areas in urban areas is on the increase as people seek simple and inexpensive ways to enjoy their daily walks for physical fitness, social interaction and relaxation. Health benefits associated with spending time in a natural setting (World Health Organization, 2008) with its positive benefits (Green Spaces and Public Health, 2007). The Corporation of the City of London (the “City”) trail system includes numerous linear and recreational trails that are often considered public open space. These significant natural areas have been identified and protected for their contribution to the representation of rare species, significant habitats, ecological processes, cultural heritage values and biological diversity within London. In addition, they contribute to providing the City with ecosystem goods and services such as carbon storage and water.

ESAs are identified in the City’s Official Plan as “areas that contain natural features and perform ecological functions that warrant their protection in a cultural context”. Publicly owned ESAs have a purpose and function distinct from all other publicly owned green space. Permitted uses, access and the generation of commercial activities within ESAs are governed by the Environmental Rules of the Official Plan for significant components of the cultural heritage system. These policies and practices
Guiding Principles for Trails in Environmentally Significant Areas

The Corporation of the City of London

May 2016

Guiding Principles for Trails in Environmentally Significant Areas

The basic principle for trail planning and design is to protect the natural features and ecological functions for which the ESA has been identified. The ecological integrity and ecosystem health of the ESA shall have priority in any use or design-related decision.

Policy and Ecological Management

1. Permitted uses shall be generally restricted to low-intensity, nature-based recreation, such as walking, cycling, bird watching, and photography. The use of pedestrian bridges (as opposed to boardwalks and "step" footbridges) shall be recommended throughout the ESA to further inform users.

2. The majority of trails will be natural surface hiking trails, augmented by the least intrusive measures ranging from trail realignment to trail closure must be considered to arrive at a preferred solution consistent with the associated significant ecological feature. If it is not feasible to accommodate alterations, running or closing that trail segment to the public must be considered to at a preferred solution consistent with the associated significant ecological feature.

3. Off-trail use will be restricted through signage and barriers, augmented by education. All EA (eg. dogs on leash) as developed by the City of London and reinforced by informational signage. Ecologically, activities, scenic, design and construction, maintenance, landscaping and management. These Somerset principles have been largely retained with modifications to include any new information obtained during the literature review and to be consistent with all new legislative and policy requirements. The final principles are generated in the following categories: Process, Values, and Permitted Activities, Design, Construction, and Maintenance. Monitoring and Management. Sections 2.1 to 2.3 provide more information on each category.

4. Guiding Principles for Trails in Environmentally Significant Areas

The City of London’s Strategy for the Natural Heritage System was introduced during the Vision London planning process in 2004. Significant from the perspective of an ecosystem, trails provide benefits through cooperation with the appropriate planning documents and guidelines developed by the City of London, MNR, the London District Conservation Authority, and the Ontario Heritage Foundation. As the Ecological Land Classification (ELC) continues to be refined to reflect the configuration of natural area, it is consistent with and generally improves the requirements for protected natural areas identified in the Government of Ontario and the Government of Canada (2004).

The ecological integrity and ecosystem health of the ESA shall have priority in any use or design-related decision.

Policy and Ecological Management

1. Users have a responsibility to follow codes of conduct and trail etiquette practices to minimize user conflicts, adherence to the Parks & Recreation Area By-law and permitted activities (eg. dogs on-leash) as developed by the City of London and reinforced by informational signage. Ecologically, activities, scenic, design and construction, maintenance, landscaping and management. These Somerset principles have been largely retained with modifications to include any new information obtained during the literature review and to be consistent with all new legislative and policy requirements. The final principles are generated in the following categories: Process, Values, and Permitted Activities, Design, Construction, and Maintenance. Monitoring and Management. Sections 2.1 to 2.3 provide more information on each category.

2.2 Policy for Trail Planning and Design

- Natural features and ecological functions for which the ESA has been identified shall be protected.
- The ecological integrity and ecosystem health of the ESA shall have priority in any use or design-related decision.
- A properly designed and implemented trail system appropriate to specific management zones and reflecting sensitivity of the natural features will be implemented to achieve the primary objective of protection and the secondary objective of providing suitable recreational and educational opportunities.
- The community will be engaged in natural area protection and the trail planning process to build awareness, foster volunteerism, and encourage participation in order to increase the capacity for creating a conservation trail system that protects natural areas as a common good and as a collective responsibility.
- Adequate, safe, accessible trails for recreation appropriate to ESA wellbeing environment will be permitted in accordance with recognized accessibility legislation (such as the Accessibility for Ontarians with Disabilities Act, 2005-2010), best practices and the above principles.

2.3 Trails and Permitted Activities

- The primary reason for trails in ESAs is to provide appropriate recreation and promote ecological education.
- Permitted uses shall generally restrict to low intensity, nature-based recreation, such as walking, wildlife watching, and passive observation, with scientific evidence encouraged but subject to seasonal periods from the City.
- To permit access to persons with disabilities, consistent with these guiding principles and AODA requirements, will be provided where this can be achieved while protecting the ecological integrity and ecosystem health of the ESA.
- Activities will be permitted when they are able to occur without negatively impacting significant ecological features and require minimal alterations.
- Adequate signage is required at all access points to identify the area as an ESA and it is from users of these responsibilities, code of conduct and restrictions of use. Appropriate trail users must be encouraged throughout the ESA for further citizen services.
- Off-trail use will be restricted through signage and barriers, augmented by education. Users have a responsibility to follow codes of conduct, trail etiquette practices to minimize user conflicts, adherence to the Parks & Recreation Area By-law and permitted activities (eg. dogs on-leash) as developed by the City of London and reinforced by informational signage. Ecologically, activities, scenic, design and construction, maintenance, landscaping and management. These Somerset principles have been largely retained with modifications to include any new information obtained during the literature review and to be consistent with all new legislative and policy requirements. The final principles are generated in the following categories: Process, Values, and Permitted Activities, Design, Construction, and Maintenance. Monitoring and Management. Sections 2.1 to 2.3 provide more information on each category.
- Installing of trails and structures will generally be timed to take place during late winter when the weather is most suitable for stabilization as well as snow and ice control. These structures will be designed and constructed to limit the potential disturbances of riparian, natural creek banks eco.etals and riparian habitats.
- Consistent with building codes and safety, structure that is of minimal cost and require the simplest technology to achieve the desired outcome, and be constructed from locally harvested or salvaged materials.
3 Policy for Trail Planning and Design

3.1 Unique Management Needs of Urban Environmentally Significant Areas

The primary purpose of an ESA is protection of the natural features and ecological functions that support ecological integrity and ecosystem health. Human uses should be permitted only when they can be demonstrated to be compatible with conservation of all the natural looks and natural processes. Management and recreation activities must be carefully planned and designed, and integrated in an adaptive-management regime in order to achieve the primary purpose of ESAs and to enable periodically trail systems to be used in an environmentally responsible manner.

3.2 Ecosystem Approach applied to Trail Planning

In the City of London, natural areas, the footprint of trails may be limited to only a portion of the natural area, and the location of potential routes to this area is most often primarily associated with sites along the Thames River Valley and its major tributaries (Wilson and Horne 1995). Within ESAs, the potential for nature-based recreation varies, and there may be little or no vegetation that supports nature-based recreation opportunities. Trail management issues that have been addressed in CMAs are prepared or updated.

The City of London's Official Plan promotes an ecosystem approach to environmental planning. This approach, when applied to trail planning, must recognize the dynamic nature of ecosystems and the potential for ecosystems to change over time. Following this approach, it is critical that trails be designed in a way that allows natural processes to function in a natural area, and that trails are designed to encourage the development of desirable species, with the intent that a minimum of maintenance will be required in the long-term. A trail system that is well designed and designed suitably can encourage disturbances to the environment by avoiding the most sensitive portions of natural areas, utilizing sustainable construction techniques, and by promoting a clear path with education opportunities and senses awareness.

4.3 Conservation Principles for Environmentally Significant Areas

ESAs are designed and designated as fully protected natural areas. In the hierarchy of the natural heritage system, ESAs are considered the highest, highest class areas within the City. They represent areas that may have unusual geologic processes, contribute important hydrologic functions, host rare and sensitive species communities and species, and unfragmented natural vegetation communities. ESAs are protected areas that will result in the permanent protection of land in ecosystems. ESAs represent areas that will provide important ecological values, such as representing the most significant features of the property.

5.3 Protection of important ecological areas, including the physical and ecological features and functions that holistic land area is defined in the primary management goals for ESAs.

In the City of London, the management of publicly owned ESAs is typically addressed through the preparation and implementation of ESA management plans. The management of ESAs is typically addressed in the City’s Official Plan, Trail Management Plans, and in the management of trails within ESAs. The management of ESAs is typically addressed in the City’s Official Plan, Trail Management Plans, and in the management of trails within ESAs. The development of CMAs must support the principles of ecosystem management, and the development of CMAs must support the principles of ecosystem management. Protection of ESAs against degradation or excessive visitor use requires that the types of recreational activities are permitted in general terms, and that visitor impacts are managed through adaptive management efforts.
4 Process for Determining Management Zones

4.1 ESA Management Zones and Overlays

The management objective for the ESA is to preserve and protect the ecological features and functions for which the area has been identified. This is primarily achieved through implementation of the habitat protection, restoration, and stewardship requirements identified in the LMPO that provide direction on the management of these areas.

A management strategy often employed in natural and provincial parks planning allocates management zones to various areas of the park. This process seeks to be an effective protection strategy for managing the potential impacts of uses, types of uses, and outdoor expectations. While it must be acknowledged that an ESA is a integrated ecological unit in which all of the parts contribute to its ecological significance and a right of way by recognizing that an ESA may contain areas that have higher relative degrees of similarity and different ecological features and functions that warrant additional protection. The highly sensitive areas should be identified and reviewed for compatibility with trail use and/or creation.

Biological data collected as part of the OMP process will be used to identify the ESA into a management zones. For each management zone, permitted uses are identified and allowed tool types, surfaces and uses are determined. In cases where there are existing trails, the identification of management zones and sensitive significant ecological feature is made in decision making regarding permits for trail management, including closure, entering or exclusion of trails, and/or where existing tool design strategies may be required.

In keeping with the concept of the ESA as an integrated dynamic system, all zones must be managed to maintain, enhance, and/or restore the ecological features and functions of the ESA in the context of overall protection and enhancement of the ESA and consistent with the City’s Official Plan and the CMP.

Table 1: Identifying and Determining Management Zones

<table>
<thead>
<tr>
<th>Zone</th>
<th>Natural Communities/Features Zoned as:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Environment Zone</td>
<td>May include Access Points, Recreation, Wildlife, Historic, and/or Utility Overlays.</td>
</tr>
<tr>
<td>Cultural Heritage Zone</td>
<td>May include Access Points, Recreation, Wildlife, Historic, and/or Utility Overlays.</td>
</tr>
<tr>
<td>Cultural1 vegetation zone</td>
<td>May include Access Points, Recreation, Wildlife, Historic, and/or Utility Overlays.</td>
</tr>
<tr>
<td>Cultural2 vegetation zone</td>
<td>May include Access Points, Recreation, Wildlife, Historic, and/or Utility Overlays.</td>
</tr>
</tbody>
</table>

1. Large proportion of non-native species.  These communities include plantations, cultural meadow (CUM), cultural thicket (CUT), cultural savannah (CUS), and cultural woodland (CUW).

5 Process for Assessing Trail Locations

Following the identification and delineation of management zones to guide the types of trails and use permitted in each zone, existing trails and proposed trails within or adjacent to the ESA will require review for compatibility with the surrounding significant ecological features. Following the completion of the file search inventory of the ESA, significant ecological features are required to be identified and evaluated. These significant ecological features are mapped as part of the life science inventory and evaluation phase of the CMP. To supplement the guidance provided in the City’s most recent version of the Environmental Management Guidelines, we have included additional notes for determining significant ecological features in Table 5.5.1 Process for Identifying and Delineating Significant Ecological Features

As part of the Conservation Master Plan process and overall management of ESAs, significant ecological features are to be identified and delineated based on previously accepted standards. Where wildlife habitat has been identified and evaluated as significant using the most recent version of the MNR’s Significant Habitat Management Criteria Schedule (2015), these species are to be assessed individually based on their unique habitat requirements. This is further reinforced by the MNR, as Species at Risk are not included as applicable wildlife habitats. Significant habitat features that were sectioned in the City’s most recent version of the Environmental Management Guidelines, we have included additional notes for determining significant ecological features in Table 5.5.1.
### Table 1: Significant Ecological Features and General Compatibility with Trails

<table>
<thead>
<tr>
<th>Significant Ecological Feature</th>
<th>General Compatibility</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat for Species of Conservation Concern</td>
<td>Yes</td>
<td>Species included in this type of wildlife habitat have a diverse range of requirements and tolerance to disturbance.</td>
</tr>
<tr>
<td>Threatened or Endangered Species</td>
<td>Yes</td>
<td>Species only habitat included in this type of wildlife habitat have a diverse range of requirements and tolerance to disturbance.</td>
</tr>
</tbody>
</table>

### Chart 1: Overview of Significant Ecological Features and Trail Recommendations for Existing Trails

1. **Identify Significant Ecological Features That Overlap the Trail System**: Consult government resources for guidance on managing the interaction between significant ecological features and existing trails.
2. **Consult government resources for guidance on managing the interaction between significant ecological features and existing trails**.
3. **The process outlined in Section 5.2 should be followed so that the ecological integrity can be preserved in the greatest possible extent**.

### Chart 2: Significant Ecological Features and Trail Recommendations for New Trails

1. **If a new plan trial area is less than 200 m from a suitable edge (measured from the subject species area, genera, species, as applicable), the following steps should be completed**.
2. **The process outlined in Section 5.2 should be followed so that the ecological integrity can be preserved in the greatest possible extent**.

### Chart 3: Review of Significant Ecological Features and Trail Recommendations for New Trails

1. **As noted in Section 5.2, ensuring that existing trails exist, as well as the grading of a trail or a ESA is subject to general level risk rating through the process described in Section 5.2**.
2. **Natural features or land ownership issues may not permit a continued connection through an ESA, particularly when trees were not planted as part of an NHPM**.
3. **If a new plan trial area is less than 200 m from a suitable edge (measured from the subject species area, genera, species, as applicable), the following steps should be completed**.
As noted in Section 5.9, the sitting of trails in ESAs is subject to ground level micro-siting through the process in Section 2.2.

5.1 Public Access and Trails Based on Management Zones

The following sections provide a description of each management zone and recommendations for public access and trails for ESAs based on the identified management zone. Information about what types of trails are permitted in each management zone is provided in Section 5.2.2.

5.1.2 Natural Environment Zone

The majority of an ESA is anticipated to be identified as a Natural Reserve Zone as this describes areas that are the result of natural processes and are not impacted by human activities. Natural Reserve Zones have lower sensitivity to trails and trail use than Nature Reserve Zones. However, these areas still have human-created disturbance processes, the designation and/or boundary of a management zone should remain unchanged to allow for natural disturbance and succession processes to continue.

Access Points

Access Points will be limited and controlled to minimize disturbances in an ESA. These are controlled access features and staging areas for visitors to the ESA from areas outside the ESA boundary where access by motorized vehicle or bicycle is required. Primary access Points will include designated parking areas and bike racks with information kiosks to orient users. Secondary access Points will have nearby on-street parking and smaller information signs and structures at the trailheads. Access Points will likely be located outside of the ESA boundary wherever possible to reduce disturbance. Where an Access Point must be located within the ESA, every effort will be made to avoid locating it in a significant ecological feature to minimize the impacts on ecological features and functions. Access Points should include central structures to facilitate the staging of a variety of user types prior to ingress into the ESA. Trailheads may include paved trails, visitor contact structures, and signage for orientation, interpretation and education.

5.1.3 Access Points

Access Points are anticipated to be identified as a Natural Reserve Zone as this describes areas that are the result of natural processes and are not impacted by human activities. Natural Reserve Zones have lower sensitivity to trails and trail use than Nature Reserve Zones. Access Points should include central structures to facilitate the staging of a variety of user types prior to ingress into the ESA. Trailheads may include paved trails, visitor contact structures, and signage for orientation, interpretation and education.

5.1.4 Changes to ESA Management Zone Designations or Boundaries

Indications of changes are dynamic and subject to change over time. Disturbance processes such as wildfires, urban, expanse, flood, and disease can result in significant change critical to natural renewal and succession processes that contribute to a greater diversity of habitat and species. In situations where detectable and obvious change is evident, the management zone and office boundary will remain unchanged as it is anticipated that disturbance processes will continue.

6 Trails and Permitted Activities

The use of trails for permitted activities should follow the four standards for ESAs in the City:

1. To preserve protection of the natural heritage through proper management training and trail design;
2. To promote both trails and trailside biodiversity outside of significant ecological features;
3. To restrict trails to low-impact nature-based activities;
4. To create safe, enjoyable and accessible trail systems for public use, education and overall nature appreciation.

6.1 City-Wide Trail Hierarchy

There are four tiers, or levels of trails and pathways that may be applied to publicly owned natural and built land areas across the City. The trails in Table 2 are included in the City-Wide Trail Hierarchy within publicly owned ESAs. This guideline document addresses the planning and design of these trails to permit appropriate access and use while protecting the features and functions of ESAs. The type of trail is determined through the process identified in Section 2.2.

5.1.5 Overlays

5.1.5.1 Restoration Overlays

Restoration overlays are applied to identify areas where action management interventions are required to enhance ecological integrity. Restoration may take the form of habitat creation, enhancement or restoration, control of invasive species, control of vessel disturbance, control of recreational disturbance, control of vehicular disturbance, control of nuisance wildlife, control of invasive species, prescribed burns and/or the creation or enhancement of habitat structures (nest boxes or platforms, ephemeral swimming holes, beaver dams, etc.). The objective is to support the City's Official Plan.

The priority goal of a restoration overlay is to maintain or restore the ecological integrity of the protecting management zone, providing opportunities for continued natural disturbance and succession. The secondary goal is to foster an appreciation to study the recovery of natural resources that have been modified by human disturbance from the past and present to facilitate public education, appreciation and stewardship.

Where restoration overlays are applied, temporary trails may be required to access existing and future restoration areas. Depending upon the ultimate goal of the restoration project, these trails may be removed or modified following completion of the restoration project.

5.1.5.2 Utility Overlay

In some instances, ESA managers must deal with an existing condition such as a utility site or corridor, or other similar infrastructure or facility, inside the ESA. In these situations, designating existing utility corridors, or corridors in the immediate vicinity of the ESA, as a Utility Overlay is established. Where utility corridors are designated within the ESA, the utility corridor is applied based on the targeted vegetation community (e.g., BLS, UHV, etc.).

The primary goal of a Utility Overlay is to protect the overall integrity of the ESA and minimize impact of the utility corridor on vegetation as it can interfere with future disturbance and succession. The objective is to facilitate the ability of the ESA manager to access the ESA boundary for operational maintenance, or required by other approval. The secondary goal depends on the circumstances of the specific ESA. Where restoration activities are required the trail will be located along the ESA boundary to minimize impacts to the surrounding ESA while achieving a social benefit by designing the Trail to accommodate persons with disability, wherever possible.

5.1.5.3 Trail Review Overlay

As indicated in Section 5.9, this overlay is to be used as part of a trail planning and review process as described in Section 4.4.2. The overlay is applied to areas where existing trails are located within or immediately adjacent to a significant ecological feature and further review is required as per Table 2.
not permitted within Nature Reserve Zones. Exceptions to this may be considered to provide access to places of cultural significance.

Types of Trails

Three types of trails may be initiated to include: surfacing with appropriate trail hardgrounds or embankments for environmental protection (e.g., deep layer, rich and accessible pathways for accessibility, such as sawsins, trails (Table 2)). Use of hard grounds or embankments may only be used within a Natural Environment Zone (Zone where it can be demonstrated it will not result in negative impact to the ecological features and structure of the surrounding area in the ESA).

7.1.3 Trail Hardgrounds

(7.1.3) Trail hardgrounds are constructed by surfacing with appropriate trail hardgrounds or embankments for environmental protection (e.g., deep layer, rich and accessible pathways for accessibility, such as sawsins, trails (Table 2)). Use of hard grounds or embankments may only be used within a Natural Environment Zone (Zone where it can be demonstrated it will not result in negative impact to the ecological features and structure of the surrounding area in the ESA).

Design and Maintenance Standards

Trail hardgrounds typically consist of natural earth, granular or asphalt surface (or other suitable non-vegetated material) to a variable width of 1.5 – 3.0 m. Where the trial is owned accessible, the trial is

accessed by the public. The trial hardgrounds may be constructed of sand, gravel, shredded rubber, wood chip, or other surface materials. Trail hardgrounds are typically 300 mm wide or greater.

7.2.3 Trail Edges

The correlation of natural earth, granular or asphalt surface (or other suitable non-vegetated material) to a variable width of 1.5 – 3.0 m. Where the trail is owned accessible, the trail is

anticipated closure of roads in a controlled manner and the anticipated use by persons with mobility disabilities.

For other larger structures such as bridges and viewing areas, etc., technical design must include adequate investigations and the preparation of design drawings completed by qualified structural and geotechnical engineers.

During the technical design stage for trail roofs, environmental and socio-economic investigations will be undertaken where necessary. In addition, consideration should be given to the need for securing a period from the LRRAA for trails and trail crossings planned within the ESA, as well as to the appropriate provision of vehicle and pedestrian crossings, where applicable, through the ESA to facilitate access for individuals with mobility impairments, and to provide an accessible route from and to the surrounding area.

7.2.2 Trail Structures

(7.2.2) Trail structures may be constructed to include: surfacing with appropriate trail hardgrounds or embankments for environmental protection (e.g., deep layer, rich and accessible pathways for accessibility, such as sawsins, trails (Table 2)). Use of hard grounds or embankments may only be used within a Natural Environment Zone (Zone where it can be demonstrated it will not result in negative impact to the ecological features and structure of the surrounding area in the ESA).
In wetter areas, low profile boardwalks are relatively easy to construct and install, where the trail is in a high profile location, or it is necessary to provide a safe and stable surface for visitors, such as a canoe or kayak. The same considerations apply to boardwalks, with additional structural elements and requirements.

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7.4.2 Barriers
Barrier structures are used in locations where control of access is required, such as on guardrails to enclose changes in elevation or to prevent unauthorized access to a closed area where the trail surface must be above standing water or greater than 60 cm above the surrounding grade. This includes construction of barriers to prevent use of trails during certain periods of time and will continue to affect users.

The location of a barrier (including trail segments that remain or are relocated) will be determined by a number of factors, including linear access constraints, natural hazards such as overhanging tree branches, wildlife habitat, and restoration requirements. The access points to all yellow-blazed trails will require signage to ensure that trail users are aware of the location of the former trail and the dangers associated with it. This will help to hide the location of the former trail, and deter ongoing use. In addition to planning for local access needs and appropriate restoration needs, the Corporation of the City of London has also implemented strategies to mitigate the impact of vandalism, especially those placed along the trail route.

Install temporary barrier fence, to protect work area on closed trail.

7.4.3 Trail Markers
These are used to highlight trail conditions that may pose safety concerns. The use of interpretive signs is an important consideration for trail planning. Signs are often targets of vandalism, especially those placed along the trail route.

7.4.4 Trail Condition
These provide general information about the ESA and trails, such as where to find flowers, where to find birds, and where to find geology. This information can be used to facilitate guided walks or to support educational programs.

7.4.5 Interpretive Signs
These provide specific educational information about points of interest, such as geological, botanical, historical, and cultural along the trail. They can represent a large range of signs and appendages, depending on the interpretive program and complexity of information to be communicated.

7.4.6 Trail Elements
As part of the effort to manage the number of trials, and to improve the location of the trails, it may be necessary to close portions of the existing trail network. Closing of the existing trail can be an essential part of the overall process of trail planning and management. This may include permanent closure of a trail, or semi-permanent closure of a portion of a trail when restoration or relocation has been identified as part of the management process. If the former trail is not properly decommissioned and its location sufficiently disguised, it will continue to affect users.

The location of a barrier (including trail segments that remain or are relocated) will be determined by the following factors: planning principles and policies discussed throughout this document.

8.2 Monitoring Framework
Monitoring changes in natural ecosystems involves collecting data from trials and using a decision framework such as the Land Attributes Change (LAC) (Cline and Halsey 2000, and the Land Use-Response-Intervention-Outcome (LURI) adaptive management framework (Bergsma and De Young 2007). This framework is used to guide decisions about the acceptability and management of impacts and order of priority. For example, topographic and geographic data from trail systems can result in the establishment of new heritage trail network through London in 1971 following the Provincial standard. Maintenance tasks to City-owned ESAs are met with yellow lines.

7.5.3 Working signs
These may be installed on trail segments that may pose safety concerns or environmental to trail users. They may be temporary or made to last a section of trail closed due to high water, or permanent to mark a section of the trail. The access points to all yellow-blazed trails will require signage to ensure that the use of the potential trail data associated with it is safe. This area is managed as a natural area for the protection of significant biological, ecological, and environmental features. Trails located such as overhanging tree branches, flooding, tides, deep snow, or freezing may be protected at user's convenience. These may be used to hide the location of the former trail, and discourage ongoing use. In addition to planning for local access needs and appropriate restoration needs, the Corporation of the City of London has also implemented strategies to mitigate the impact of vandalism, especially those placed along the trail route.

Install signage that redirects trail users.

8.1.3 Adaptive Management Approach
Establishment of baseline conditions through a CMP process or other environmental planning process is essential to implementing an adaptive management approach. Baseline data provides a benchmark against which objectives related to ecosystem protection, environmental policies and management can be measured. Monitoring is an important element of this process, allowing for the adaptive management of ecosystems, to ensure that objectives related to ecosystem protection, environmental policies and management are being achieved while achieving community and social objectives.

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Install signage that redirects trail users.
Acronyms, Abbreviations, Definitions

- **Adaptation Management** – a structured, iterative process of optimal decision making in the face of uncertainty, informed by the effectiveness of one series of achievable adaptation actions. It involves an understanding of how to proactively adapt to climate change in order to manage or reduce its negative impacts.

- **Anthropic** – relating to, or resulting from the influence of human beings on nature.

- **Biocultural** – as defined under Ecological Land Classification for Southern Ontario – First Approximation and Its Application. A relatively large unit of land or sea that contains a geographically distinct assemblage of natural communities with boundaries that approximate the original extent of the natural environment prior to human land use change.

- **Ecosystem Health** – a state of health in which the structure and function of ecosystems are in accord with their natural capacity to sustain themselves. This includes the ability of ecosystems to maintain healthy populations of species, support ecological processes, and provide goods and services to humans.

- **Ecosystem Integrity** – a state of health in which the structure and function of ecosystems are in accord with their natural capacity to sustain themselves. This includes the ability of ecosystems to maintain healthy populations of species, support ecological processes, and provide goods and services to humans.

- **Environmental Significant Areas (ESAs)** – a relatively large unit of land or sea that contains a geographically distinct assemblage of natural communities with boundaries that approximate the original extent of the natural environment prior to human land use change.

- **Erosion** – a relatively large unit of land or sea that contains a geographically distinct assemblage of natural communities with boundaries that approximate the original extent of the natural environment prior to human land use change.

- **Invasion** – a process by which non-native species are introduced into new environments, leading to changes in the existing community structure and function.

- **Natural** – relating to the natural environment, as distinct from human-made or human-altered environments.

- **Non-native** – relating to species that are not native to an area, having been introduced by humans.

- **Native** – relating to species that are native to a particular area, having evolved in that environment.

- **Urban** – relating to or occurring in an urban environment, as distinct from natural or rural environments.

- **Vegetation Community** – a relatively large unit of land or sea that contains a geographically distinct assemblage of natural communities with boundaries that approximate the original extent of the natural environment prior to human land use change.
Ontario. Once a habitat regulation has been defined for a listed species, this replaces the general habitat.

Habitat - A zone on which a species depends, directly or indirectly, to carry out its life processes. This includes places that are used by the species as nests, roosts, or for other purposes. It doesn’t include areas that the species once lived in or may be introduced to in the future. In the absence of a listed area, it is defined as Threatened or Endangered under the Emergency Response Act, 2007, that species’ general habitat is legally protected as well.

General Habitat Description - General habitat description is a technical, science-based document that provides clarity on the zone of general habitat protected for a species. They have been developed for some of the provincially threatened species that can be most likely to be affected by human activity (see Habitat Categories). The Ministry of Natural Resources and Forestry (MNRF) is part of the government ministry of the Ontario government.

Government Resources - Technical reports published by government agencies.

Riparian Zone - A narrow strip of land along the edge of a watercourse. It includes the vegetation and soil that show the effects of submersion under water. In the case of watercourse features, such a line would lie on the bank where the vegetation and soil show the effects of submersion under water.

Groundwater - Water found in the tiny spaces between soil particles and in cracks in bedrock. Aquifers are the underground areas of soil or rock where water can be found. There are three sources for water wells and springs. Groundwater discharges above or below the ground when the water table meets the ground surface. This discharge is measured in two units: feet and cubic yards.

Habitat Categories - When the Ministry of Natural Resources and Forestry issues a General Habitat Description for a species or a habitat, the habitat is categorized to help identify areas within the species’ habitat that may be at risk from human or natural influences. Habitat categories are categorized by considering how a species uses its habitat and taking into account any unique characteristics of that habitat. Habitat categories may vary among species and generally help determine where activities may change or destroy habitat and what conditions may be required for an authorization.

The Corporation of the City of London

May 2016

Additional Notes, Guidelines, and Government Resources

The Habitat Category

Category 1: These are areas of habitat where a species is believed to be extremely sensitive to human activity and take into account any unique characteristics of that habitat. Habitat categories may vary among species and generally help determine where activities may change or destroy habitat and what conditions may be required for an authorization.

Category 2: These are areas of habitat where a species is believed to be moderately sensitive to human activity and take into account any unique characteristics of that habitat. Habitat categories may vary among species and generally help determine where activities may change or destroy habitat and what conditions may be required for an authorization.

Category 3: These are areas of habitat where a species is believed to be least sensitive to human activity and take into account any unique characteristics of that habitat. Habitat categories may vary among species and generally help determine where activities may change or destroy habitat and what conditions may be required for an authorization.

High-water mark - The highest that the water gets under normal conditions. During the course of a year, but not the highest it gets during extreme flooding. In the case of watercourse features, such a line would lie on the bank where the vegetation and soil show the effects of submersion under water.

Interior Habitat - Interior habitats are those that provide area-sensitive species refuge from edge effects. These habitats are typically measured from the edge of the feature (e.g., woodland or grassland) or by an extended interior habitat (the area that is more than 200 m inward from the edge of the woodland feature). For clarity, this differs from woodland interior, which is more than 200 m inward from the edge of the woodland.

Micro-siting - This refers to reviewing the location for a trail through a site, which may include a Conservation Area, Parks, or residential areas. The objective is to ensure that the trail is placed in a way that will not harm the species or its habitat, as well as other factors that are being planned. The micro-siting process involves determining how much work can be done to maintain the trail and how much money needs to be spent on trail maintenance.

Ontario’s Habitat Legislation System - Created to inform Ontario’s land use planning process. The Ministry of Natural Resources and Forestry works with local municipalities, conservation authorities, and other organizations to ensure that the planning process is being followed and that the public is aware of the laws and regulations that apply to their area.

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Spring - A water resource formed when the side of a hill, a valley bottom or other excavation intersects a water resource. Springs are typically measured from the side of the hill, valley bottom, or other excavation where the water resource intersects the area.

Sustainable Design Practices - These are practices that can be used to reduce the environmental impact of a project. They include practices such as reducing the amount of waste generated, maximizing the use of natural light, and using materials that are environmentally friendly.

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TAG: Trails Advisory Group – representing ESA user groups to comment on any trail-related issues in ESAs that were not addressed or contemplated in the most current Conservation Master Plans (CMP), or where a current CMP does not exist. The detailed terms of reference for TAG is outlined under separate cover as approved by Council.

Unevaluated Wetland – a wetland that has not been evaluated using the Ontario Wetland Evaluation System.

Utility Corridor – generally a linear anthropogenic feature that contains infrastructure (e.g., hydro transmission lines, gas or water pipeline, railroad, levee, embankments).

Watercourse – an identifiable depression in the ground in which a flow of water occurs regularly or continuously.

Wildlife Habitat – see Significant Wildlife Habitat.