Trail mitigation and compatibility guideline

1. Introduction

Over the last few years the City has seen a growing demand for trails. Trails allow us to get from place to place, experience natural environments, and contribute to an active lifestyle. Some trails allow us to travel through forests, beside rivers, or around other natural areas. If not managed appropriately, people's desire to experience natural areas can be harmful to the environment.

Trails can be a land management tool. They can be strategically designed to promote sustainable access to natural areas, protect sensitive ecosystems, and control recreation activities. Trails can direct people to experience nature in ways that preserve the environment. Trail construction projects are also effective at enhancing the natural environment, removing invasive species and improving overall natural area health. Therefore, it is important to plan and develop trails to ensure the continued health and integrity of the natural environment.

This guideline was developed to assist in the interpretation of the City's policies around trail development and compatible uses, as well as planning considerations and mitigations to ensure no negative impacts to the Natural Heritage System's features or functions.

2. Policy Context

Guelph's Natural Heritage System (NHS) policies are contained within Section 4.1 of the City's Official Plan (February 2024 Consolidation). These policies recognize that

trails and passive recreational uses may be compatible with preserving and protecting natural features. While trails through some particularly sensitive areas are not permitted under these policies, there are other areas within the NHS where trails can be created as long as they are designed to mitigate potential damage or negative impacts to the natural environment. In an urban setting, a well-designed trail network can be an important part of a natural area's management to avoid negative impacts such as the spread of invasive species and the creation of ad hoc trails.

The natural heritage policies related to permitted uses and trail creation can be found in sections 4.1.2, 4.1.3, and 4.1.4 of the Official Plan.

3. Compatible Uses

3.1 Natural Heritage System: Buffer Area

Buffer areas are identified as adjacent to natural heritage features or areas that are intended to be protected and provide a separation between the protected feature or area and the adjacent development, and mitigate against negative impacts to the natural heritage feature or area and/or its ecological function(s).

Requirements related to minimum buffers, where applicable, established buffers and adjacent lands, for all natural heritage features and areas, are identified on Table 4.1 of the City's Official Plan.

Where trails are proposed in natural area buffers, they should incorporate additional design considerations to be compatible with the management objectives of the buffers, which are primarily intended to protect natural areas from human activities. When evaluating an existing buffer for the addition of a trail, or designing a buffer with intention to include a trail, the following factors should be considered:

- Significance and Sensitivity: When determining whether a trail would be suitable within a location, it is important to identify the significance and sensitivity of the natural area that the buffer is intended to protect. Where ecological communities immediately adjacent to the buffer are highly sensitive to disturbance, a trail may not be appropriate.
- No Negative Impact: An Environmental Impact Study (EIS) may be required to support the construction of a trail or trail modification adjacent to a Significant Natural Area such as a Provincially Significant Wetland or Significant Woodland as identified within the feature-specific policies of the Official Plan. The effect(s) of the trail should be manageable through mitigation within the buffer and/or natural area, with the result being no

negative impact to the function of the buffer and no negative impact to the feature or its functions. If a trail does not meet the no negative impact test, then it would not be permitted.

- Buffer characteristics: Depending on the significance and sensitivity of the natural area, a minimum of 10-30 meters should be available for the placement of secondary and tertiary trails. It is generally recommended that trails be situated toward the outer portion of the buffer. Buffers that are below 10 m wide are not suitable for trails.

Early consultation with Environmental Planning will help ensure that policies are being followed and streamline a successful project. Additional consultation will be required with Grand River Conservation Authority if the proposed trail is within the regulation area.

For further information on trail types and their characteristics please refer to the Guelph Trail Master Plan(GTMP, 2021).

3.2 Natural Heritage System: Significant Natural Areas and Natural Areas

Planning for trails in the NHS must consider suitable trail development to address anticipated uses, intensity of use, and natural heritage protection. A scoped EIS is generally required to support the construction of a trail or trail modification within the Natural areas.

A trail may be permitted within a Significant Natural Area or Natural Area if the following can be demonstrated:

- The trail is designed to facilitate passive recreational uses or scientific and educational uses, such as bird watching, hiking, photography, snowshoeing, and may require the construction of a trail, benches or boardwalks in accordance with the GTMP.

- The trail is consistent with the feature-specific policies in Section 4.1 of the Official Plan. For example, if the trail is planned through a wetland, a boardwalk is included in the design.

- The trail design demonstrates that no negative impact will result from the construction or use of the trail. The assessment of no negative impact should consider site conditions including slope, topography, trees and other vegetation, and drainage. The trail classification system provided within the GTMP identifies tertiary trails as having little impact to the NHS. The trail design is evaluated

through an EIS to determine if the design is anticipated to have a negative impact on the NHS.

In some instances, the trail may be essential for active transportation connection such as a school route, connection to grocery or other essential service, or connection to employment area. These areas are identified in the Active Transportation Networks Study and are discussed in the following section.

3.3 Active Transportation Network

The Active Transportation Network (ATN) Study (2017) identified key trails which were deemed to be essential infrastructure. As part of the scope of the ATN Study, each of the routes proposed in the ATN were examined in the context of the City's Natural Heritage Strategy. The purpose of this work was to identify which segments of the proposed ATN would be subject to EIS requirements as part of next steps in designing and implementing the recommended trail improvements, and to assist in coordinating requirements and work plans for individual trail improvements. Essential trail segments identified in the NHS through the ATN Study are permitted, despite their "active" nature, provided that no negative impact to the NHS can be demonstrated and the recommendations provided in Appendix B of the ATN Study for trail design are incorporated into the design.

4. Trail Planning Considerations

When identifying the best location and route for a trail the following principles should be used to guide the planning, of trails:

1. Identify and avoid environmentally sensitive areas. If avoidance of environmentally sensitive areas is not possible, minimize disturbance, incorporate mitigation measures and restore areas of disturbance.

2. Create an effective erosion and sediment control plan and a construction access and staging plan.

3. Close and restore informal trails where required with native vegetation.

4. Follow desire lines and avoid trail routing that encourages users to take shortcuts where an easier route or interesting feature is visible. Use landforms or vegetation to block potential shortcuts and decrease the potential for ad hoc trail creation.

5. Adequately consult with appropriate professionals including ecologists, biologists, ornithologists, hydrologists, and geologists to obtain further information on the proposed location, appropriate surfacing, as well as any potential impacts that have not been assessed.

6. Avoid routes that impact wildlife species as well as critical habitat of rare or fragile plant species. Wildlife considerations would be dependent on the species, and may include avoiding areas of forest interior (>100 m from forest edge), providing snake basking areas away from the trail, and providing wildlife crossing structures under trails to facilitate safe movement of amphibians, reptiles and small mammals.

7. Avoid cutting down trees and unnecessary trampling of vegetation and provide adequate tree root protection (refer to the TTM Establishment of Tree Protection Zones (TPZ) and Potential Rooting Areas (PRA)).

8. Avoid aligning a trail through wet areas such as ponds, marshes and seasonal drainage areas, or use structures such as bridges and boardwalks to facilitate travel over wet areas, to avoid erosion and sedimentation. Other strategies include interception swales, erosion protection stone (rip-rap), stabilization plantings, and low-impact development which can be used to mitigate potential erosion. Trails which are proposed near (0-30 metres) or within wetlands will require consultation with the Grand River Conservation Authority.

9. If rare plant species are present and the trail cannot be rerouted, then the plants should be transplanted to an area with similar growth conditions (light, moisture, soil texture).

10. Create a hazard tree management plan for primary and secondary trail systems.

11. Create a detailed restoration and planting plan (including tree compensation details and restoration plans for areas impacted by development) to be implemented as a component of construction activities.

5. Trail Construction Mitigations

The following construction mitigation measures are to be utilized where applicable, along with any additional measures outlined within corresponding EIS and/or Environmental Impact Report (EIR) documents:

1. Installation of effective erosion and sediment control measures before starting work to prevent sedimentation and erosion. The type of ESC required will be dependent on the sensitivity of the adjacent environments. Non-biodegradable erosion and sediment control materials shall be removed once site is stabilized.

2. Maintain appropriate setback from the rooting zone of edge trees in accordance with the tree inventory and preservation plan.

3. Refuel and service machinery and store/stockpile fuel and other materials a minimum of 30m from any surface water features to prevent any deleterious substances from entering the water/wetlands.

4. Where vegetation must be removed it shall be done by hand, by qualified workers, and restored with native vegetation in conformance with the following City of Guelph documents:
    - Tree Technical Manual (2019)
    - Private Tree Protection by-law (2010)
    - Urban forest Management Plan 2013-2032 (2012)

5. Ensure minimal importation of materials and maximize the use of 'clean' and 'local' sources for materials including rough cut timber, and deadfalls.

6. Restrict construction activities to the work areas. Implement surface protection measures to minimize soil compaction.

7. To avoid impacts to Species at Risk bats, individual tree removals are completed before April 1st or after October 31st to avoid the active period for bats. Vegetation removal, specifically the removal of trees, between April 1st to October 31st is not recommended due to the potential to harm Species at Risk bats.

8. To comply with the Migratory Birds Convention Act, 1994 and the Fish and Wildlife Conservation Act, 1997, where impacts to Species at Risk bats are not identified, vegetation removal may occur between April 1st and October 31st if nest searches are completed by a wildlife biologist following the methods outlined by Environment Canada.

9. Implement "Clean Equipment Protocol for Industry" (Halloran et al. 2013) to inspect and clean equipment for the purposes of invasive species prevention.

6. City of Guelph Related Documents

- Guelph Trail Master Plan (2021)
- City of Guelph Tree Technical Manual (2019)
- Guelph Private Tree Protection by-law (2010)
- Urban Forest Management Plan 2013-2032 (2012)
- Active Transportation Study (2017)