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Purpose

The following guidelines identify the information needed to prepare a stewardship plan, including restoration, enhancement, forest management, and/or planting plans within the area protected by the *Ravine and Natural Feature Protection (RNFP) By-law, Toronto Municipal Code Chapter (MCC) 658*.

Stewardship Plan Benefits

Implementing a stewardship plan on private property helps to protect and conserve the natural ravine or woodland features and their functions, including slope stability. This benefits the subject property, the community and the natural environment.

Professional Preparation

A stewardship plan should be prepared by a professional with demonstrated experience in forest management or ecological restoration in Southern Ontario. A professional will be able to undertake all the important and required field data collection and analysis and assist in formulating appropriate goals, objectives and strategies for managing the natural features and functions of the subject property. The Society of Ecological Restoration (SER) Ontario Chapter may be able to assist property owners in finding a professional with adequate experience.

Stewardship Plan Approval Required

Within the *RNFP By-law* protected area, any tree injuries and removals and alterations to grade, (excluding areas regulated by the Toronto and Region Conservation Authority), require a permit from Urban Forestry. This includes work done to support the implementation of a stewardship plan. Incomplete applications result in review and approval delays.

Pre-Application Consultation

Scheduling a meeting with RNFP staff is recommended prior to application submission in order to clarify the scope and submission requirements. RNFP can be contacted by emailing RNFP@toronto.ca or phoning 416-392-2513. The RNFP Urban Forestry Planner for the area will follow up as required.

Stewardship Plan Requirements

The following information is required for the review and approval of a stewardship plan.

1. Site Description

Use of Ecological Land Classification (ELC) for Southern Ontario is recommended.

- A. Describe the physical setting of the property (i.e. physiography, hydrology, topography), including:
 - A brief description of the relationship between soils, topographic features, landform, slope stability, locations of known fill, climate and microclimate;
 - Surface and subsurface water conditions, for example swales, seeps, etc.;
 - Slope position, shape, grade, aspect, elevation and erosion features; and
 - A site survey with contours to illustrate slope gradients, flow of water, etc.

- B. Describe the soils on the property, including:
 - A description of soil textures, horizon depths, coarse fragments, depths to carbonates, bedrock, water table, mottles, gleying, and characteristics of parent material etc.; and
 - Soil moisture and drainage classes (as per ELC).

- C. Provide a comprehensive inventory of vegetation on the property including:
- Trees, shrubs, groundcover layer of herbs, forbs, and vines (as per ELC) found on site;
 - Data collection undertaken throughout the growing season (i.e. May to October);
 - A list of all plant species;
 - A description of the vertical (layers) and horizontal (distribution) structure of plant communities and approximate age of each layer; and
 - A description of species composition of plant communities based on volume, density, or basal area.
- D. Identify physical disturbances and invasive species including:
- A list and map locations of invasive species, and describe the extent of infestation; and
 - Delineate areas of fill soils, or other factors such as presence of garbage/debris, underground and overhead utilities, etc.

2. Map of Site Conditions

- A. Prepare a map of areas within the site that have uniform conditions; and
- B. Identify/describe areas, applying specific ELC Community unit labels, if possible.

3. Assessment of Stewardship Opportunities and Constraints

- A. Identify constraints to improve the potential for successful implementation
- Evaluate disturbed areas (human or natural) that could impact the establishment of vegetation and recommend site remediation/erosion or access control measures if required
 - Identify the biotic/abiotic limiting factors for vegetation establishment and maintenance within each of the identified areas, addressing factors such as soil conditions, aspect, existing canopy or structures limiting light, difficulty for watering access, informal access, erosion issues and extent of infestation of invasive species etc.
- B. Identify opportunities to enhance forest health and diversity to improve outcomes
- Create a buffer to reduce migrating negative impacts (e.g. erosion, spread of invasive species, noise, etc.)
 - Improve diversity of species and habitat
 - Improve connectivity with adjacent forest areas
 - Restrict informal access

4. Statement of Goals, Objectives and Strategies

- A. Identify broad stewardship goal(s) and long term objectives based on sound ecological principles, considering site characteristics, land use and land capability;
- B. Identify strategies to achieve plan objectives. For example, prune trees, remove invasive species, plant native trees and shrubs, litter clean up, removal of dumping/fill/refuse, soil de-compaction, terracing using felled logs, monitoring and maintenance, erosion control mats, fencing/signage to discourage trespassing, add habitat structures or leave dead snags to attract wildlife etc.;
- C. Indicate on a plan the different zones where strategies for stewardship will be used. For example:
 - Zone A: Habitat structures added;
 - Zone B: Removal of invasive trees followed by planting of native trees and shrubs; and
 - Zone C: Removal of invasive herbs followed by planting of native shrubs and herbs

Work zones should be based roughly on the areas that have been identified.

5. Implementation of Strategies

- A. Implementation Plan
 - Provide a detailed description of how each of the identified strategies, for example, site preparation, invasive species control, slope rehabilitation or stabilisation, planting etc. will be implemented. Identify the specific strategy or action, identify and map the location and extent and identify timing (provide schedules) of events
- B. Planting Plan
 - Indicate and map the plant zones within the plan area for different types of planting, if applicable. Tree, shrub and herbaceous plantings including quantities, stock size and spacing must be determined by local site conditions and opportunities/constraints as identified in each of the zones.
 - Final planting locations should be determined by a qualified professional implementing the plan at the time of planting. Substitute species should also be identified and pre-approved by the consulting professional to accommodate additional flexibility in advance.
 - Add planting notes regarding mulch, topsoil amendments, tree guards, staking, watering schedule and minimum two (2) year planting warranty.
 - It is preferred that plant material is obtained from nurseries that provide locally adapted plant material grown from seed or propagated from local sources.

6. Implementation Schedule, Maintenance and Monitoring/Reporting

A realistic cost estimate for the entire implementation, maintenance and monitoring plan needs to be provided.

A. Implementation Schedule

- An implementation schedule includes the timing and sequence for achieving the plan objectives.
- The timing of a stewardship plan can vary however a five year plan is a good standard. An example of a five (5) year schedule is outlined below.
 - Year 1 - Fall/Winter: Removal of invasive tree species and hazardous trees,
 - Year 2 - Spring: Planting of phase 1 trees and shrubs
 - Year 2 - Watering to avoid drought stress throughout first growing season
 - Year 3 - Spring: Invasive species control and mulching
 - Year 3 - Watering of year 1 and 2 plantings to avoid drought stress throughout growing season
 - Year 3 - Fall: Pruning and additional planting
 - Year 4 - Spring: Additional planting
 - Year 4 - Watering newly planted species throughout growing season
 - Year 5 and beyond - On-going control of invasive species

B. Maintenance Plan

- Provide a detailed description of how existing trees and planted material will be maintained (i.e. watering, mulching, pruning) and how invasive species will be controlled over the duration of the plan. Identify the specific maintenance strategy or action, map the location and extent and identify timing by providing schedules of events.
- Invasive species management needs to comply with Ontario Invasive Plant Council Best Management Practices.

C. Monitoring and Reporting Plan

- Provide a brief description, including any criteria and indicators of how the site will be monitored or evaluated to ensure that stewardship strategies are succeeding.
- Monitoring must be clearly documented and reported to the property owner and Urban Forestry using a Monitoring and Reporting Plan.

7. Stewardship Plan Checklist

The Stewardship Plan must include the following items:

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- Statement of Goals, Objectives and Strategies
- Comprehensive Detailed Site Description
- Maps (i.e. plans) delineating areas showing detailed site description information
- Implementation and Maintenance Plans, Schedules and Budgets
- Statement of Monitoring Protocols

Additional Information

External list of native plant nurseries/plant databases

- <https://can-plant.ca/where-to-buy.htm>
- <https://inthezonegardens.ca/where-to-find-native-plants/>
- <http://frontyardrestoration.com/index.html>

New York City Parks – Guidelines for Urban Forest Restoration

- <https://www.nycgovparks.org/pagefiles/84/guidelines-to-urban-forest-restoration.pdf>

Ravine and Natural Feature Protection – City of Toronto Website

- <https://www.toronto.ca/services-payments/building-construction/tree-ravine-protection-permits/permit-to-undertake-work-in-ravines/>

Stewardship Plan Detailed Description

Approved By

Manager, Tree Protection and Plan Review

Project Manager, Tree Protection and Plan Review - Ravine and Natural Feature Protection

Contact

Ravine and Natural Feature Protection Office, RNFP@toronto.ca, 416-392-2513