Terms of Reference:

Invasive Species Management Plan

Description:

Invasive species are organisms that are not indigenous or native to a specific area and have the ability to spread, often resulting in impacts to the environment, including ecological features and function, as well as the economy and human health. Nevertheless, the City recognizes the ecological function and contribution to the natural heritage systems land base provided by features containing invasive species. Management approaches must be proportionate, evidence-based, and designed to avoid unnecessary disturbance or destabilization of existing natural features.

This Terms of Reference document provides guidance on the required content of a site-specific Invasive Species Management Plan submitted in support of planning and development applications made under the *Planning Act* and as part of the Natural Heritage System Enhancements metric of the City's Sustainable New Communities Program (SNCP).

When Required:

This study may be required for the following development applications:

- Precinct Plans
- Plans of Subdivision
- Site Plans

Prepared By:

An Invasive Species Management Plan should be prepared and signed by qualified professional with expertise in invasive species ecology, management, control and/or eradication methods, and restoration or enhancement. A qualified professional may include ecologists, environmental scientists, or invasive species specialists with demonstrable field experience. The author must demonstrate recent and relevant experience in invasive species identification and management within southern Ontario or comparable ecological regions, and should be a member in good standing of a relevant professional association where applicable.

Invasive Species Management Plan

Rationale:

Invasive species management provides an organized and targeted approach to controlling invasive species while promoting biodiversity restoration and enhancement within the Natural Heritage System. Management actions aim to minimise the negative impacts of invasive species by preventing new introduction, reducing existing infestations, controlling the spread, and mitigating impacts, while enhancing ecological integrity and resilience, including establishment and protection of native species. Effective invasive species management support long-term environmental stewardship, climate resilience, and the sustainability objectives of the City planning framework.

Content:

1. Project Background
    - Location of the site and study area, including a key map.
    - Identification and description of the study area limits, including the development footprint, adjacent Natural Heritage Systems lands, buffers, setbacks, and anticipated construction disturbance zones (e.g. grading limites, access routes, stockpiling areas).
    - Brief description of the natural heritage feature(s), including any significant or sensitive elements in or adjacent to the site (e.g. Significant Wildlife Habitat, Species at Risk, wetlands, fish habitat, overlapping or adjacent habitats etc.).
    - Brief description of the proposed development and anticipated interaction with natural features.
    - Map of the site's vegetation communities in accordance with Ecological Land Classification (ELC) methodology.
    - Summary of applicable planning approvals and related environmental studies e.g. Environmental Impact Study, Tree Inventory, and mitigation and restoration plans.
    - Qualifications of author(s) of the plan.

2. Methodology
    - Date(s) of site survey(s).
    - Description of methods used to survey the site and conduct the invasive species inventory.
    - Identification of survey season(s), limitations, and assumptions.

- References to standard protocols or best management practices used (e.g. ELC protocols, Ontario Invasive Species Plant Council guidance, and applicable Conservation Authority technical guidance).

3. Invasive Species Inventory and Assessment
   - Conduct a site survey during appropriate seasons that includes walking the entire site and identifying and recording an inventory of the invasive species found within natural heritage features and adjacent disturbance areas.
   - A detailed description of each invasive species identified, including:
     - Species name (common and scientific)
     - Regulatory status, if applicable
     - Assessment of potential negative ecological impacts
     - Modes of reproduction and spread
     - Estimated extent, density, or percent cover
     - Pertinent management considerations
   - A list of proposed priority invasive species to managed, including priority ranking and a clear rationale for prioritization (e.g. ecological risk, feasibility of control, risk of spread due to development etc.). Identification of any early detection/rapid response (EDRR) species.
   - A summary of any previous invasive species management activities conducted on the site, if applicable.

4. Mapping
   - Site mapping prepared over recent aerial imagery and clearly identifying the location and extent of the invasive species infestation using polygons.
   - Maps must identify:
     - Development footprint and construction disturbance limits
     - Areas of high invasive species infestation (e.g. buckthorn-dominated communities)
     - Areas proposed for short, medium, and long-term invasive species management treatments.
   - GIS compatible mapping is encouraged.

5. Photos
   - One or more photos of representative of each invasive species or invasive species community on site.
   - Photos must be dated and keyed to mapping or photo locations.

6. Management Objectives

- Statement of the desired biological and physical condition of the site or feature.
- Identification of short, medium, and long-term management objectives:
    - Short-term objectives (0-2 years): actions required prior to and during early stages of development to address immediate issues and support the City in achieving long term outcomes (owner/developer's responsibility)
    - Medium-term objectives (3-5 years): actions following Assumption required to continue moving the site to its desired condition (City's responsibility)
    - Long-term objectives (5-10 years): ongoing actions to maintain the desired condition (City's responsibility)
- Objectives must be supported by qualitative and quantitative success criteria ground in principles of adaptive ecosystem management.

7. Recommendations/Actions
    - A list of actions required to achieve each management objective organized by implementation timeframe (short, medium, and long-term).
    - Identification and mapping of invasive species management zones.
    - Site-specific treatment methods and Best Management Practices (BMPs), including:
        - Separation of invasive and non-invasive plant material
        - Soil and seed bank management
        - Disposal methods
        - Transport of materials
        - Cleaning of machinery and equipment
        - Sediment and erosion control measures
        - Methods for protecting of existing vegetation, native plantings, habitats, and sensitive features
    - Construction sequencing, timing windows, and site controls to minimize spread of invasive species.
    - A Restoration Planting Plan identifying the location, species, size, and density of vegetation (refer to the City's Landscape Development Guidelines), including site preparation, planting methods, and timing.
    - Maintenance requirements from planting through establishment.

8. Monitoring Approach
    - A monitoring plan rooted in the principles of adaptive ecosystem management that includes:
        - Identification of monitoring responsibilities
        - Parameters to be monitored

    - Defined performance targets and thresholds for success
    - Monitoring frequency and schedule
    - Timeline and format for assessment reports comparing pre and post development treatment conditions
    - Monitoring reports must be submitted to the City for review and acceptance
- Requirement for a 'Final Assessment Report' prior to Assumption, outlining achievements, remaining actions, and recommendations for future management:
    - Adaptive management measures to be implemented if monitoring indicated objectives are not being met. Include contingency measures should invasive species reestablish or control efforts fail.

Additional Resources:

- Brampton Official Plan (2024)
- Brampton Sustainable New Communities Program (2025)
- Brampton Grow Green Environmental Master Plan (2020)
- Brampton Urban Forest Management Plan (2022)
- Brampton Woodland Management Plan Terms of Reference
- Brampton Environmental Implementation Report and Environmental Impact Study Terms of Reference