

Terms of Reference: Wetland Management Plan

Description:

A Wetland Management Plan (WMP) is a technical supporting report that may be required prior to approval where development is proposed contains or is adjacent to a wetland and identifies how the wetland(s) can be protected, maintained, restored, and enhanced. The Plan will contain wetland management objectives, as well as short, medium, and long-term management actions. A WMP provides clear guidance to balance development with wetland conservation.

Applicant must submit the following materials for review:

- A completed Wetland Management Plan including all necessary maps, reports, and data.
- Supporting studies, which may include hydrological studies, Environmental Impact Study/Environmental Impact Reports (EIS/EIRs), and stormwater management plans.
- Consultation records, which may include documentation of consultations with relevant stakeholders, including MECP and Conservation Authorities.

When Required:

A Wetland Management Plan may be required for the following planning application types where development is proposed adjacent to a Provincially Significant Wetland (PSW), unevaluated wetland or other wetland, as identified in the City's Official Plan:

- Official Plan Amendment
- Zoning By-Law Amendment
- Plan of Subdivision
- Site Plan

Prepared By:

Applicant who is responsible for engaging a qualified environmental consultant to prepare the Wetland Management Plan. Environmental consultant must have expertise in wetland ecology, hydrology, and environmental management.

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Rationale:

Wetlands play a vital role in Brampton's Natural Heritage and Water Resource Systems and the health of Brampton's watersheds. Wetlands provide numerous environmental services and a multitude of social, economic, and cultural benefits, such as flood management, improved water quality and quantity, erosion risk reduction, wildlife habitat, food chain support, recreational opportunities, and aesthetic value. Wetlands also play a critical role in helping to mitigate and adapt to climate change by storing carbon and providing resilience against extreme weather events such as storms and flooding. Wetlands and water resource systems are most powerful when connected. Protecting and enhancing wetlands and preserving an intact water resource system will ensure that these natural heritage features continue to provide services and benefits, now and for future generations.

Content:

The Wetland Management Plan will be informed by the recommendations in higher order studies, such as Subwatershed Studies (SWS), Master Environmental Servicing Plans (MESP) and/or Environmental Implementation Reports (EIR) where they exist. The Wetland Management Plan can be submitted to the City as a separate report or included within an Environmental Impact Study (EIS).

Objectives of the Wetland Management Plan

- a. Review and update the information and recommendations of the Master Environmental Servicing Plan (MESP) and/or Environmental Implementation Report (EIR) for the subject lands.
- b. Provide additional site study and analysis in areas requiring clarification and detail.
- c. Evaluate technical development alternatives being considered, and present a ranking of preference based on the predicted impacts of each.
- d. Recommend short, medium, and long-term management actions that will enhance the ecological function of the wetland.
- e. Outline development proponent and municipal roles and responsibilities for management actions.

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Minimum Requirements of the Wetland Management Plan

A Wetland Management Plan must include the following content at minimum:

a. Wetland Evaluation:

Provide a wetland evaluation that updates information from MESP/EIR regarding ecosystem functions and ecosystem sensitivity ranking.

b. Site Description:

Clearly describe the physical and ecological characteristics of the site.

• Detailed Maps:

- All maps must identify watercourses, floodplains, and natural heritage features.
- Include Constraint map that identifies the exact boundaries of wetlands, other natural heritage features, adjacent land uses, and relevant hydrological connections and their associated environmental buffers and additional constraints (e.g. flood line) that may impact the final limit of development
- Include overlays with zoning, topography, and hydrology.

• Ecological and Hydrological Assessment:

- Flora: Identify dominant plant species, with specific focus on wetland-obligate species, invasive species, and species at risk. Fauna: Include species surveys for amphibians, birds, mammals, and invertebrates, paying special attention to Species at Risk (SAR) and habitat specialists.
- Hydrology: Characterize the existing hydrological regime, including sources of water (precipitation, surface runoff, groundwater), seasonal variability, and outflow points. Evaluate hydrologic connectivity between wetland and adjacent areas including the broader water resource system and the Natural Heritage System.
- Water Quality: Include baseline measurements of key water quality parameters (e.g., pH, dissolved oxygen, nutrient concentrations, suspended sediments).

c. Wetland Health and Function:

Outline current ecological condition and role of the wetland in its landscape.

• Baseline Conditions:

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- Assess the ecological integrity of the wetland, highlighting its hydrological, biological, and geological features.
- Assess community types and provide a detailed vegetation community map, indicating the extent of wetland types (swamp, bog, marsh, etc.). Field collection sheets can be provided upon request.
- If applicable, assess Headwater Drainage Features (HDF) present.
- Identify the wetland's ecosystem services, such as flood attenuation, nutrient cycling, groundwater recharge, and wildlife habitat.
- Conduct targeted wildlife and habitat surveys including Locally Significant Species, Species at Risk, Significant Wildlife Habitats, and critical habitats (refer to Ontario Wetland Evaluation System). Include timing and methods used (e.g., breeding bird surveys, fish samples, amphibian call counts). Highlight habitat requirements for species found in this wetland ecosystem.

d. Impact Assessment:

Provide a comprehensive analysis of the impacts that the proposed development will have on the wetland's functions and health if unmitigated.

- Potential Impacts:
 - Examine direct impacts, such as habitat loss, alterations to hydrology, and increased pollutants (e.g. runoff from impervious surfaces).
 - Identify indirect impacts, like changes to local groundwater regimes or downstream effects on water quality.
 - Evaluate potential cumulative impacts from adjacent developments and historical land use changes.
- Hydrological Modelling:
 - Use hydrological models to assess the changes in water balance due to development (e.g. increased surface runoff or reduced infiltration).
 - Demonstrate how stormwater management will prevent altered flow regimes or loss of wetland function including impacts on HDF, if applicable.

e. Mitigation Measures:

Provide steps to avoid, minimize, and mitigate impacts of the proposed development.

- Mitigation Strategies:
 - Avoidance: Prioritize development that avoids high-functioning wetland areas and buffers and eliminates negative impacts on the wetland.
 - Minimization: Propose changes to site design that minimize disturbances.

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- If impacts are unavoidable, provide a detailed wetland enhancement/restoration approach that ensures no net loss of function and area. Specify the target functions for restored or created wetlands (e.g. water storage, wildlife habitat) and the techniques to be used (e.g. hydric soil replacement, planting native wetland species).
- Outline a monitoring framework to assess the success of measures at 3 and at 5 years post-construction.
- Include maps, drawings, and/or plans detailing the proposed avoidance, mitigation, and enhancement/restoration measures proposed.

f. Management Plan

Provide a statement of biological and physical status that is sought and maintained throughout the management process. It should also include short, medium, and long-term objectives and associated actions.

- i. Short-term objectives – correction of immediate problems and actions that will assist the City in achieving long-term objectives (developer responsibility).
 - ii. Medium-term objectives – initial actions after assumption that will move the wetland to its desired state (City responsibility).
 - iii. Long-term objectives – ongoing actions to ensure the wetland's desired state is maintained (City responsibility).
- Outline the actions that must be undertaken to meet the short-term, medium-term, and long-term objectives. This section will also indicate the responsible party for each action (e.g. development proponent and/or City).
 - Include maps, drawings, and/or plans detailing the actions.

g. Monitoring and Adaptive Management:

Provide details for a robust monitoring program to ensure that the wetland remains healthy over the long term.

- Long-term Monitoring:
 - Establish performance indicators (e.g., vegetation cover, water quality parameters, hydrology benchmarks) to assess the condition of the wetland post-development.
 - Submit monitoring reports to the City for at 3 and at 5 years post-construction.
- Adaptive Management:

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- Include contingency measures to adjust the management approach if the wetland shows signs of degradation (e.g., additional buffer planting, re-routing stormwater).

h. *Alignment with City Policies:*

- Provide a detailed compliance matrix showing adherence to Official Plan policies

Additional Resources:

- Brampton Plan (2024)
- Brampton Grow Green Environmental Master Plan (2020)
- City of Brampton Environmental Implementation Report (EIR) Environmental Impact Study (EIS) Terms of Reference
- Ontario Wetland Evaluation System (OWES) manuals and guides
- TRCA and CVC technical guidelines and checklists